document to the refining industry. Nothing in this Paragraph will require COPC to violate any licensing or other use agreement COPC may have with the manufacturers of Beavon Stretford TGUs. COPC will incorporate the results of its best practices investigation, as applicable, into the PMO Plans required under Paragraph 125 for those Refineries that operate Beavon Stretford TGUs.

134. Until December 31, 2013, COPC will not be in violation of Paragraphs 119 and 120 of this Consent Decree during Scheduled Turnarounds of the TGUs at the Alliance, Bayway, Santa Maria, and Wood River Refineries if:

(a) exceedances of the emission limits in Paragraph 120 are due to the Scheduled Turnaround of the associated TGU;

(b) COPC fully complies with Paragraphs 125 - 133; and

(c) With respect to each individual Refinery, COPC complies with the conditions set forth below:

(i) Alliance: Excluding Scheduled Turnarounds of the TGU that occur when the entire Alliance Refinery is shut down: (A) COPC conducts only one Scheduled Turnaround of the TGU between the Date of Lodging and December 31, 2013; (B) the FCCU is shut down during that one Scheduled TGU Turnaround; and (C) the Scheduled TGU Turnaround does not last longer than thirty (30) days.

(ii) Bayway: (A) COPC conducts only three Scheduled Turnarounds of the TGU between the Date of Lodging and December 31, 2013; (B) the FCCU is shut down during each of these three Scheduled TGU Turnarounds; and (C) each such Scheduled TGU Turnaround does not last longer than thirty-five (35) days.

(iii) Santa Maria Refinery: (A) COPC conducts only two Scheduled Turnarounds of the TGU between the Date of Lodging and December 31, 2013; (B) the calciner is shut down during each of these two Scheduled TGU Turnarounds; and (C) each such Scheduled TGU Turnaround does not last longer than thirty (30) days.

(iv) Wood River Refinery: (A) COPC schedules only two Scheduled Turnarounds of the TGU between the Date of Lodging and December 31, 2013; (B) one FCCU is shut down during each of these two Scheduled TGU Turnarounds; and (C) each such Scheduled TGU Turnaround does not last longer than twenty-one (21) days.

135. Redirection of the Bayway SRP Feed. If and when COPC submits a complete application or notice (whichever is applicable) to NJDEP to revise, modify, or surrender the permit(s) relating to the Bayway SRP and TGU for the purpose of shutting down the Bayway SRP and redirecting the SRP feed to an independent sulfuric acid plant, then COPC may submit a request to EPA and NJDEP (for the approval of both) to waive compliance with the requirements of Paragraphs 127 through 132 as they apply to the Bayway Refinery. If EPA or NJDEP does not respond to the request within ninety (90) days, the request will be deemed approved. To the extent that the request is approved, the exception set forth in Paragraph 134 will expire at the later of (i) the date of the approval of the request; or (ii) December 31, 2006.

I. NSPS Applicability of the Sulfuric Acid Plant at LAR Wilmington

136. By no later than the Date of Lodging, the sulfuric acid plant at the LAR Wilmington Plant will comply with the emission limits at 40 C.F.R. §§ 60.82 and 60.83. By no later than March 31, 2005, COPC will submit one or more proposed AMPs to EPA for approval. The sulfuric acid plant at the LAR Wilmington Plant will be an "affected facility," as that term is used in the NSPS, 40 C.F.R. Part 60, and will be subject to and comply with the requirements of NSPS Subparts A and H upon EPA's approval of the AMP(s), or upon completion of such other action as may be required by Paragraph 427.

137. Compliance with this Consent Decree Constitutes Compliance with Certain NSPS Subpart A Requirements. Entry of this Consent Decree and compliance with the applicable

monitoring requirements for sulfuric acid plants will satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8(a).

J. NSPS Applicability of Flaring Devices

138. NSPS Applicability of Flaring Devices. COPC owns and operates the Flaring Devices that are identified in Appendix A. These Flaring Devices are or will become affected facilities as that term is used in the NSPS at such time as COPC certifies compliance and accepts NSPS applicability under Paragraphs 142 - 143.

139. Compliance Methods for Flaring Devices. For each Flaring Device, COPC will elect to use one or any combination of following compliance methods:

(a) Operate and maintain a flare gas recovery system to control continuous or routine combustion in the Flaring Device. Use of a flare gas recovery system on a flare obviates the need to continuously monitor and maintain records of hydrogen sulfide in the gas as otherwise required by 40 C.F.R. §§ 60.105(a)(4) and 60.7;

(b) Operate the Flaring Device as a fuel gas combustion device and comply with NSPS monitoring requirements by use of a CEMS pursuant to 40 C.F.R. § 60.105(a)(4) or with a predictive monitoring system approved by EPA as an alternative monitoring system pursuant to 40 C.F.R. § 60.13(i);

(c) Eliminate the routes of continuous or intermittent, routinely-generated fuel gases to a Flaring Device and operate the Flaring Device such that it receives only process upset gases, fuel gas released as a result of relief valve leakage or gases released due to other emergency malfunctions; or

(d) Eliminate to the extent practicable routes of continuous or intermittent, routinely-generated fuel gases to a Flaring Device and monitor the Flaring Device by use of a CEMS and a flow meter; provided however, that this compliance method may not be used unless COPC: (i) demonstrates to EPA that the Flaring Device in question emits less than 500 pounds per day of SO_2 under normal conditions; (ii) secures EPA approval for use of this method as the selected compliance method; and (iii) uses this compliance method for five or fewer of the Flaring Devices listed in Appendix A.

140. For the compliance method described in Paragraph 139(b), to the extent that COPC seeks to use an alternative monitoring method at a particular Flaring Device to

demonstrate compliance with the limits at 40 C.F.R. § 60.104(a)(1), COPC may begin to use the method immediately upon submitting the application for approval to use the method, provided that the alternative method for which approval is being sought is the same as or is substantially similar to the method identified as the "Alternative Monitoring Plan for NSPS Subpart J Refinery Fuel Gas" attached to EPA's December 2, 1999, letter to Koch Refining Company LP.

141. Compliance Plan for Flaring Devices (Paragraphs 141 - 142). For each Covered Refinery, COPC will submit a Compliance Plan for Flaring Devices to EPA and the Applicable Co-Plaintiff by no later than December 31, 2007. The Plan will have the objective of reducing to the extent practicable: (i) the routing of continuous or intermittent, routinely-generated fuel gas streams that contain hydrogen sulfide of greater than 230 mg/dscm (0.10 gr/dscf) to Flaring Devices; and (ii) the characterization of streams that COPC considers to be the result of alleged malfunctions, process upsets, and/or relief valve leakage by taking into consideration the source and frequency of the stream.

142. In each Refinery's Compliance Plan for Flaring Devices, COPC will:

(a) Certify compliance with one of the four compliance methods set forth in Paragraph 139 and accept NSPS applicability for at least (i) 50% of the system-wide Flaring Devices identified in Appendix A; and (ii) one Flaring Device per Refinery where such Refinery has three or more Flaring Devices;

(b) Identify the Paragraph 139 compliance method used for each Flaring Device that COPC identifies under Subparagraph 142(a);

(c) Describe the activities that COPC has taken or anticipates taking, together with a schedule, to meet the objectives of Paragraph 141 at each Refinery; and

(d) Describe the anticipated compliance method and schedule that COPC will undertake for the remaining Flaring Devices identified in Appendix A.

143. By no later than December 31, 2011, COPC will certify compliance to EPA and the Applicable Co-Plaintiff with one of the four compliance methods in Paragraph 139 and will accept NSPS applicability for all of the Flaring Devices in Appendix A.

144. Performance Tests. By no later than ninety (90) days after bringing a Flaring Device into compliance by using one or more of the methods in Paragraph 139, COPC will conduct a flare performance test pursuant to 40 C.F.R. §§ 60.8 and 60.18, or an EPA-approved equivalent method. In lieu of conducting the velocity test required in 40 C.F.R. § 60.18, COPC may submit velocity calculations that demonstrate that the Flaring Device meets the performance specification required by 40 C.F.R. § 60.18.

145. The combustion in a Flaring Device of process upset gases or fuel gas that is released to the Flaring Device as a result of relief valve leakage or other emergency malfunctions is exempt from the requirement to comply with 40 C.F.R. § 60.104(a)(1).

146. Good Air Pollution Control Practices. On and after the Date of Entry of this Decree, COPC, at all times, including during periods of startup, shutdown, and or Malfunction, will, to the extent practicable, maintain and operate the Flaring Devices in Appendix A, and associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions pursuant to 40 C.F.R. § 60.11(d).

147. Compliance with Consent Decree Constitutes Compliance with Certain NSPS Subpart A Requirements. For Flaring Devices that become affected facilities under NSPS Subpart J pursuant to Paragraphs 142 and 143, entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree for Flaring Devices will satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8(a).

148. Periodic Maintenance of Flare Gas Recovery Systems. The Parties recognize that periodic maintenance may be required for properly designed and operated flare gas recovery systems. To the extent that COPC currently operates or will operate flare gas recovery systems, COPC will take all reasonable measures to minimize emissions while such periodic maintenance is being performed.

149. Safe Operation of Refining Processes. The Parties recognize that under certain conditions, a flare gas recovery system may need to be bypassed in the event of an emergency or in order to ensure safe operation of refinery processes. Nothing in this Consent Decree precludes COPC from temporarily bypassing a flare gas recovery system under such circumstances.

K. CERCLA/EPCRA

150. To the extent that, during the course of COPC's development of the Compliance Plans for Flaring Devices required by Paragraph 141, COPC discovers information possibly demonstrating a failure by COPC to comply with the reporting requirements for continuous releases of SO_2 pursuant to Section 103(c) of CERCLA and/or Section 304 of EPCRA, including the regulations promulgated thereunder, a voluntary disclosure by COPC of any such violations will not be deemed "untimely" under EPA's Audit Policy or any Co-Plaintiff's audit policy, solely on the ground that it is submitted more than twenty-one (21) days after it is discovered, provided all such disclosures are made by no later than December 31, 2007 (the due date for the Compliance Plans for Flaring Devices).

L. Control of Acid Gas Flaring Incidents and Tail Gas Incidents

151. Past Acid Gas Flaring Analysis. COPC has identified Acid Gas Flaring Incidents that have occurred at the Covered Refineries in recent years and has described their probable causes and estimated emissions. COPC has implemented (or is in the process of implementing) corrective actions to address the root causes of the prior incidents and to minimize the number and duration of Acid Gas Flaring Incidents.

152. Future Acid Gas Flaring and Tail Gas Incidents: General. COPC agrees to implement a program to investigate the cause of future Acid Gas Flaring and Tail Gas Incidents, to take reasonable steps to correct the conditions that cause or contribute to such Acid Gas Flaring and Tail Gas Incidents, and to minimize Acid Gas Flaring and Tail Gas Incidents. COPC will follow the procedures in this Section V.L to evaluate whether future Acid Gas Flaring and Tail Gas Incidents occurring after the Date of Entry of this Decree are due to Malfunctions or are subject to stipulated penalties. The procedures set forth in Section V.L require a Root Cause Analysis ("RCA") and corrective action for all types of Acid Gas Flaring and Tail Gas Incidents. The procedures require stipulated penalties for Acid Gas Flaring and Tail Gas Incidents if the Root Causes are not due to Malfunctions.

153. Investigation and Reporting (Root Cause Analysis). By no later than forty-five (45) days following the end of an Acid Gas Flaring or Tail Gas Incident, COPC will submit a report to EPA and the Applicable Co-Plaintiff that sets forth the following:

(a) The date and time that the Acid Gas Flaring or Tail Gas Incident started and ended. To the extent that the Acid Gas Flaring or Tail Gas Incident involved multiple releases either within a 24-hour period or within subsequent, contiguous, non-overlapping 24-hour periods, COPC will set forth the starting and ending dates and times of each release;

(b) An estimate of the quantity of sulfur dioxide that was emitted and the calculations that were used to determine that quantity;

(c) The steps, if any, that COPC took to limit the duration and/or quantity of sulfur dioxide emissions associated with the Acid Gas Flaring or Tail Gas Incident;

(d) A detailed analysis that sets forth the Root Cause and all contributing causes of that Acid Gas Flaring or Tail Gas Incident, to the extent determinable;

(e) An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of an Acid Gas Flaring or Tail Gas Incident resulting from the same Root Cause or contributing causes in the future. The analysis will discuss the alternatives, if any, that are available, the probable effectiveness and cost of the alternatives, and whether or not an outside consultant should be retained to assist in the analysis. Possible design, operation and maintenance changes will be evaluated. If COPC concludes that corrective action(s) is (are) required under Paragraph 154, the report will include a description of the action(s) and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates. If COPC concludes that corrective action is not required under Paragraph 154, the report will explain the basis for that conclusion;

(f) A statement that:

(1) Specifically identifies each of the grounds for stipulated penalties in Paragraphs 158 and 159 of this Decree and describes whether or not the Acid Gas Flaring or Tail Gas Incident falls under any of those grounds;

(2) if an Acid Gas Flaring or Tail Gas Incident falls under Paragraph 161 of this Decree, describes which Subparagraph (161(a) or 161(b)) applies and why;

(3) if an Acid Gas Flaring or Tail Gas Incident falls under either Paragraph 159 or Paragraph 161(b), states whether or not COPC asserts a defense to the Incident, and if so, a description of the defense;

(g) To the extent that investigations of the causes and/or possible corrective actions still are underway on the due date of the report, a statement of the anticipated date by which a follow-up report fully conforming to the requirements of this Paragraph 153 will be submitted. However, if COPC has not submitted a report or a series of reports containing the information required to be submitted under this Paragraph within the forty-five (45) days (or such additional time as EPA may allow) after the due date for the initial report for the Acid Gas Flaring or Tail Gas Incident, the stipulated penalty provisions of Paragraph 332 will apply, but COPC will retain the right to dispute, under the dispute resolution provisions of this Consent Decree, any demand for stipulated penalties that was issued as a result of

COPC's failure to submit the report required under this Paragraph 153 within the time frame set forth. Nothing in this Paragraph 153 will be deemed to excuse COPC from its investigation, reporting, and corrective action obligations under this Section V.L for any Acid Gas Flaring or Tail Gas Incident which occurs after an Acid Gas Flaring or Tail Gas Incident for which COPC has requested an extension of time under this Paragraph 153.

(h) To the extent that completion of the implementation of corrective action(s), if any, is not finalized at the time of the submission of the report required under this Paragraph 153, then, by no later than thirty (30) days after completion of the implementation of corrective action(s), COPC will submit a report identifying the corrective action(s) taken and the dates of commencement and completion of implementation.

154. Corrective Action (Paragraphs 154 - 157). In response to any AG Flaring or Tail Gas Incident occurring after the Date of Entry, COPC will take, as expeditiously as practicable, such interim and/or long-term corrective actions, if any, as are consistent with good engineering practice to minimize the likelihood of a recurrence of the Root Cause and all contributing causes of that AG Flaring or Tail Gas Incident.

155. If EPA does not notify COPC in writing within forty-five (45) days of receipt of the report(s) required by Paragraph 153 that it objects to one or more aspects of the proposed corrective action(s), if any, and schedule(s) of implementation, if any, then that (those) action(s) and schedule(s) will be deemed acceptable for purposes of compliance with Paragraph 154 of this Decree. EPA does not, however, by its consent to the entry of this Consent Decree or by its failure to object to any corrective action that COPC may take in the future, warrant or aver in any manner that any corrective actions in the future will result in compliance with the provisions of the Clean Air Act, corollary state/local acts, or their implementing regulations. Notwithstanding EPA's review of any plans, reports, corrective measures or procedures under this Section V.L, COPC will remain solely responsible for non-compliance with the Clean Air Act, corollary state/local acts, and their implementing regulations. Nothing in this Section V.L will be

construed as a waiver of EPA's rights under the Clean Air Act and its regulations for future violations of the Act or its regulations.

156. If EPA does object, in whole or in part, to the proposed corrective action(s) and/or the schedule(s) of implementation, or, where applicable, to the absence of such proposal(s) and/or schedule(s), it will notify COPC of that fact within forty-five (45) days following receipt of the report(s) required by Paragraph 153 above. If EPA and COPC cannot agree on the appropriate corrective action(s), if any, to be taken in response to a particular Acid Gas Flaring or Tail Gas Incident, either Party may invoke the Dispute Resolution provisions of Section XV of the Consent Decree.

157. Nothing in this Section V.L will be construed to limit the right of COPC to take such corrective actions as it deems necessary and appropriate immediately following an Acid Gas Flaring or Tail Gas Incident or in the period during preparation and review of any reports required under this Section.

158. Stipulated Penalties for AG Flaring and Tail Gas Incidents (Paragraphs 158 - 161). The stipulated penalty provisions of Paragraph 332 will apply to any Acid Gas Flaring or Tail Gas Incident for which the Root Cause is one or more or the following acts, omissions, or events:

(a) Error resulting from careless operation by the personnel charged with the responsibility for the Sulfur Recovery Plant, TGU, or Upstream Process Units;

(b) A failure of equipment that is due to a failure by COPC to operate and maintain that equipment in a manner consistent with good engineering practice;

(c) Failure to follow written procedures; or

(d) For each of the following Covered Refineries:

(1) Alliance

(i) Steam jacketing leaks in lines between SRP and TGU; or
(ii) Failure of 1391-X-1 and subsequent shutdown of the reformer unit

(2) Bayway

(i) Inadequate winterization of control valve UPO52 controlling acid gas; or
(ii) C101 governor valve linkage failure

(3) Borger

(i) Sulfur condenser leaks into SRU 34

(4) Ferndale

(i) Failure to follow facility-specific winterization program; or
(ii) Inadequate winterization of the SWS overhead accumulator level control taps; or
(iii) Inadequate winterization of the SRP waste heat boiler level sensing lines

(5) LAR Wilmington

(i) False signal to SRU feed control valves causing valves to close

Except for a force majeure event, COPC will have no defenses to a demand for stipulated penalties for an Acid Gas Flaring or Tail Gas Incident under this Paragraph 158.

159. The stipulated penalty provisions of Paragraph 332 will apply to any Acid Gas Flaring Incident or Tail Gas Incident that either:

(a) Results in emissions of sulfur dioxide at a rate greater than twenty (20.0) pounds per hour continuously for three (3) consecutive hours or more and COPC failed to act in a manner consistent with the PMO Plan and/or to take any action during the Acid Gas Flaring Incident or Tail Gas Incident to limit the duration and/or quantity of SO_2 emissions associated with such Incident; or

(b) (i) For Acid Gas Flaring Incidents, causes the total number of Acid Gas Flaring Incidents per Refinery in a rolling twelve (12) month period to exceed five; or

(ii) for Tail Gas Incidents, causes the total number of Tail Gas Incidents per Refinery in a rolling twelve (12) month period to exceed five.

160. In response to a demand by the United States for stipulated penalties with respect to any Acid Gas Flaring Incident or Tail Gas Incident falling under Paragraph 159, COPC will be entitled to assert a Malfunction and/or force majeure defense. In the event that a dispute arising under Paragraph 159 is brought to the Court pursuant to the dispute resolution provisions of this Consent Decree, nothing in this Paragraph is intended or will be construed to prevent COPC from asserting its view that startup, shutdown, and Malfunction defenses are available for Paragraph 159 Acid Gas Flaring Incidents or Tail Gas Incidents, nor to prevent the United States from asserting its view that such defenses are not available. In the event that an AG Flaring Incident or a Tail Gas Incident falls under both Paragraph 158 and Paragraph 159, then Paragraph 158 will apply.

161. The stipulated penalty provisions of Paragraph 332 will apply to Acid Gas Flaring and Tail Gas Incidents other than those identified in Paragraphs 158 and 159 as follows:

(a) First Time: No stipulated penalties will apply if the Root Cause is a first time occurrence of a Root Cause provided:

(1) If the Root Cause of the Acid Gas Flaring Incident or Tail Gas Incident was sudden, infrequent, and not reasonably preventable through the exercise of good engineering practice, then that cause will be designated as an agreed-upon Malfunction for purposes of reviewing subsequent Acid Gas Flaring Incidents;

(2) If the Root Cause of the Acid Gas Flaring Incident or Tail Gas Incident was sudden and infrequent, and was reasonably preventable through the exercise of good engineering practice, then COPC will implement corrective action(s) pursuant to Paragraphs 154 - 157.

(b) Recurrence: Stipulated penalties will apply if the Root Cause is a recurrence of the same Root Cause of a previous Acid Gas Flaring Incident or Tail Gas Incident that occurred since the Date of Entry unless:

(1) the AG Flaring Incident or Tail Gas Incident resulted from a Malfunction; or

(2) the Root Cause previously was designated as an agreed-upon Malfunction under Paragraph 161(a)(1); or

(3) the AG Flaring Incident or Tail Gas Incident was a recurrence of an event for which COPC had previously developed, or was in the process of developing, a corrective action plan but COPC had not yet completed implementation.

(c) In the event that a dispute arising under Subparagraph 161(b) is brought to the Court pursuant to the dispute resolution provisions of this Consent Decree, nothing in Subparagraph 161(b) is intended or will be construed to deprive COPC from asserting that startup, shutdown, and Malfunction defenses are available for Acid Gas Flaring Incidents and Tail Gas Incidents, nor to deprive the United States from asserting that such defenses are not available.

162. Other than for a Malfunction or force majeure, if no Acid Gas Flaring Incident, no Tail Gas Incident, and no violation of the emission limits under Paragraph 120 occur at a Covered Refinery for a rolling thirty-six (36) month period, then the stipulated penalty provisions of Paragraph 332 no longer apply to that Covered Refinery. EPA may elect to prospectively reinstate the stipulated penalty provision if COPC has an Acid Gas Flaring or Tail Gas Incident which would otherwise be subject to stipulated penalties. EPA's decision to reinstate stipulated penalty provisions will not be subject to dispute resolution. Once reinstated, the stipulated penalty provision will apply to future AG Flaring and Tail Gas Incidents at that Covered Refinery and will continue until termination of this Consent Decree.

163. Calculation of the Quantity of Sulfur Dioxide Emissions Resulting from AG Flaring Incidents. For purposes of this Consent Decree, the quantity of SO_2 emissions resulting from AG Flaring will be calculated by the following formula:

Tons of SO_2 = [FR][TD][ConcH_2S][8.44×10^{-5}].

The quantity of SO_2 emitted will be rounded to one decimal point. (Thus, for example, for a calculation that results in a number equal to 10.05 tons, the quantity of SO_2 emitted will be rounded to 10.1 tons; for a calculation that results in a number equal to 10.04 tons, the quantity of SO_2 emitted will be rounded to 10.0 tons.) For purposes of determining the occurrence of, or the total quantity of SO_2 emissions resulting from, an AG Flaring Incident that is comprised of intermittent AG Flaring, the quantity of SO_2 emitted will be equal to the sum of the quantities of SO_2 flared during each such period of intermittent AG Flaring.

164. Calculation of the Rate of SO_2 Emissions During AG Flaring. For purposes of this Consent Decree, the rate of SO_2 emissions resulting from AG Flaring will be expressed in terms of pounds per hour, and will be calculated by the following formula:

$ER = [FR][Conc H_2S][0.169]$.

The emission rate will be rounded to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.95 pounds of SO_2 per hour, the emission rate will be rounded to 20.0 pounds of SO_2 per hour; for a calculation that results in an emission rate of 20.04 pounds of SO_2 per hour, the emission rate will be rounded to 20.0.)

165. Meaning of Variables and Derivation of Multipliers used in the Equations in Paragraphs 163 and 164:

ER =	Emission Rate in pounds of SO_2 per hour
FR =	Average Flow Rate to Flaring Device(s) during Flaring, in standard cubic feet per hour
TD =	Total Duration of Flaring in hours
$Conc H_2S$ =	Average Concentration of Hydrogen Sulfide in gas during Flaring (or immediately prior to Flaring if all gas is being flared) expressed as a volume fraction (scf H_2S/scf gas)

8.44×10^{-5} = [lb mole H_2S/379 scf H_2S][64 lbs SO_2/lb mole H_2S][Ton/2000 lbs]

0.169 = [lb mole H_2S/379 scf H_2S][1.0 lb mole SO_2/1 lb mole H_2S][64 lb SO_2/1.0 lb mole SO_2]

Standard conditions: 60 degree F; 14.7 lb_{force}/sq.in. absolute

The flow of gas to the AG Flaring Device(s) ("FR") will be as measured by the relevant flow meter or reliable flow estimation parameters. Hydrogen sulfide concentration ("ConcH_2S") will be determined from the Sulfur Recovery Plant feed gas analyzer, from knowledge of the sulfur content of the process gas being flared, by direct measurement by tutwiler or draeger tube analysis or by any other method approved by EPA. In the event that any of these data points is unavailable or inaccurate, the missing data point(s) will be estimated according to best engineering judgment. The report required under Paragraph 153 will include the data used in the calculation and an explanation of the basis for any estimates of missing data points.

166. Calculation of the Quantity of SO_2 Emissions Resulting from a Tail Gas Incident. For the purposes of this Consent Decree, the quantity of SO_2 emissions resulting from a Tail Gas Incident will be calculated by one of the following methods, based on the type of event:

(a) If the Tail Gas Incident is combusted in a flare, the SO_2 emissions are calculated using the methods outlined in Paragraphs 163 - 165; or

(b) If the Tail Gas Incident is an event exceeding the 250 ppmvd (NSPS J limit), from a monitored Sulfur Recovery Plant incinerator or stack, then the following formula applies:

$$ER_{TGI} = \sum_{i=1}^{TD_{TGI}} [FR_{Inc.}]_i [Conc.\ SO_2 - 250]_i [0.169 \times 10^{-6}] \left[\frac{20.9 - \%\ O_2}{20.9}\right]_i$$

Where:

ER_{TGI} = Emissions from Tail Gas at the Sulfur Recovery Plant incinerator or stack, SO_2 lb over a twenty-four (24) hour period

TD_{TGI} = Total Duration (number of hours) when the incinerator or stack CEMS exceeded 250 ppmvd SO_2 corrected to 0% O_2 on a rolling twelve (12) hour average, in each twenty-four (24) hour period of the Incident

i = Each hourly average

$FR_{Inc.}$ = Incinerator or Stack Exhaust Gas Flow Rate (standard cubic feet per hour, dry basis) (actual stack monitor data or engineering estimate based on the acid gas feed rate to the SRP) for each hour of the Incident

Conc. SO_2 = Each actual twelve (12) hour rolling average SO_2 concentration (CEMS data) that is greater than 250 ppm in the incinerator or stack exhaust gas, ppmvd corrected to 0% O_2, for each hour of the Incident

% O_2 = O_2 concentration (CEMS data) in the incinerator or stack exhaust gas in volume % on dry basis for each hour of the Incident

0.169×10^{-6} = [lb mole of SO_2 / 379 SO_2] [64 lbs SO_2 / lb mole SO_2] [1×10^{-6}]

Standard conditions = 60 degree F; 14.7 lb_{force}/sq.in. absolute

In the event the concentration SO_2 data point is inaccurate or not available or a flow meter for FR_{Inc}, does not exist or is inoperable, then estimates will be used based on best engineering judgment.

M. <u>Control of Hydrocarbon Flaring Incidents</u>

167. For Hydrocarbon Flaring Incidents occurring after the Date of Entry, COPC will follow the same investigative, reporting, and corrective action procedures as those outlined in Paragraphs 153 - 157 for Acid Gas Flaring and Tail Gas Incidents. However:

(a) Hydrocarbon Flaring Incidents will be reported in a Covered Refinery's quarterly/semi-annual reports due under Section IX rather than on an incident-by-incident basis;

(b) For each of the Flaring Devices identified in Appendix A, COPC may prepare and submit a single RCA for one or more Root Causes found by that analysis to routinely recur. COPC will inform EPA and the Applicable Co-Plaintiff that it is electing to report only once on that Root Cause(s). Unless EPA or the Applicable Co-Plaintiff objects within thirty (30) days of receipt of the RCA, such election will be effective;

(c) For the six (6) month period after the installation of a flare gas recovery system (that is, during the time in which the flare gas recovery system is being commissioned), COPC will not be required to undertake Hydrocarbon Flaring Incident investigations if the root cause of the Hydrocarbon Flaring Incident is directly related to the commissioning of the flare gas recovery system;

(d) In lieu of analyzing possible corrective actions under Paragraph 153 and taking interim and/or long-term corrective action under Paragraph 154 for a Hydrocarbon Flaring Incident attributable to the startup or shutdown of an Upstream Process Unit that COPC has previously analyzed under this Paragraph 167, COPC may identify such prior analysis when submitting the report required under this Paragraph 167.

(e) To the extent that a Hydrocarbon Flaring Incident at a Covered Refinery has as its Root Cause the bypass of a flare gas recovery system for safety or maintenance reasons as set forth in Paragraphs 148 - 149, COPC will be required to describe only the HC Flaring Incident and to list the date, time, and duration of such Incident in the quarterly/semi-annual reports due under Section IX.

168. Stipulated penalties under Paragraphs 158 - 161 and Paragraph 332 do not apply to Hydrocarbon Flaring Incident(s).

169. The formulas at Paragraphs 163 - 165 used for calculating the quantity and rate of sulfur dioxide emissions during AG Flaring Incidents will be used to calculate the quantity and rate of sulfur dioxide emissions during HC Flaring Incidents.

170. For Distilling West, COPC will continue to implement operating practices designed to reduce flaring and associated emissions from coker drum switch cycles. As part of its efforts to reduce flaring, COPC will continuously operate the COPC-upgraded coker drum gas recovery system during all periods during which coker drums are switched. The immediately-preceding sentence will no longer apply if COPC installs a flare gas recovery system on the Distilling West Flare in accordance with Paragraph 139(a).

N. **Benzene Waste Operations NESHAP Program Enhancements**

171. In addition to continuing to comply with all applicable requirements of 40 C.F.R. Part 61, Subpart FF ("Benzene Waste Operations NESHAP" or "Subpart FF"), COPC agrees to undertake, at each of the Covered Refineries, the measures set forth in this Section V.N to ensure continuing compliance with Subpart FF and to minimize or eliminate fugitive benzene waste emissions.

172. Current Compliance Status. COPC will comply with the following compliance options:

(a) On the Date of Lodging, COPC's Bayway and Trainer Refineries will comply with the compliance option set forth at 40 C.F.R. § 61.342(c) and (c)(3)(ii) (hereinafter referred to as the "2 Mg compliance option");

(b) On the Date of Lodging, COPC's Ferndale Refinery will comply with the 2 Mg compliance option, with the exception of the work required under Paragraph 174;

(c) On the Date of Lodging, COPC's Alliance, Borger, LAR Wilmington, Sweeny, and Wood River (including Distilling West) Refineries will comply with the compliance option set forth at 40 C.F.R. § 61.342(e) (the "6 BQ compliance option");

(d) By no later than January 31, 2005, COPC's LAR Carson Plant will comply with the 6 BQ compliance option;

(e) On or before April 30, 2004, COPC reported that it had a Total Annual Benzene ("TAB") of less than 10 Mg/yr at its Rodeo and Santa Maria Refineries.

173. Refinery Compliance Status Changes. Commencing on the Date of Entry of the Consent Decree and continuing through termination, COPC will not change the compliance status of any Refinery from the 6 BQ compliance option to the 2 Mg compliance option. If at any time from the Date of Lodging of the Consent Decree through its termination, the Rodeo or Santa Maria Refineries are determined to have a TAB equal to or greater than 10 Mg/yr, COPC will utilize the 6 BQ compliance option. COPC will consult with EPA and the Applicable Co-

Plaintiff before making any change in compliance strategy not expressly prohibited by this Paragraph 173. All changes must be undertaken in accordance with the regulatory provisions of the Benzene Waste Operations NESHAP.

174. Compliance Schedule for the Ferndale Refinery. By no later than December 31, 2005, COPC will cease using the roughing filter at the Ferndale Refinery as part of that Refinery's wastewater treatment system and will instead route all wastewater exiting from the induced gas flotation units to a modified biological portion of the wastewater treatment system that COPC will design, construct, maintain and operate in compliance with the definition of an "enhanced biodegradation unit" pursuant to 40 C.F.R. § 61.348(b)(2)(ii)(b). By no later than fifteen (15) days after the end of the calendar quarter in which this Consent Decree is lodged, and on a quarterly basis thereafter until completion of the installation, COPC will submit a report to EPA Region 10 and NWCAA regarding the progress of the modifications to the wastewater treatment plant. These quarterly reports will be submitted in addition to any other reporting requirement of this Decree and will include a description of COPC's progress in implementing the modifications, including but not limited to, designing, ordering, procuring, installing, and modifying the plant, a description of any problems encountered or anticipated with respect to meeting the requirements of this Paragraph, and any other matters that COPC believes should be brought to the attention of EPA or NWCAA.

175. One-Time Review and Verification of Each Covered Refinery's TAB: Phase One of the Review and Verification Process. By no later than September 30, 2005, for the Bayway, Borger, Ferndale, LAR Carson, Rodeo and Santa Maria Refineries, and by no later than March 31, 2006, for the Alliance, LAR Wilmington, Sweeny, Trainer, and Wood River Refineries, COPC will complete a review and verification of each Covered Refinery's TAB and

each Covered Refinery's compliance with the applicable compliance option. For each Covered Refinery, COPC's Phase One review and verification process will include, but not be limited to:

(a) an identification of each waste stream that is required to be included in the Covered Refinery's TAB (e.g., slop oil, tank water draws, spent caustic, desalter rag layer dumps, desalter vessel process sampling points, other sample wastes, maintenance wastes, and turnaround wastes (that meet the definition of waste under Subpart FF));

(b) a review and identification of the calculations and/or measurements used to determine the flows of each waste stream for the purpose of ensuring the accuracy of the annual waste quantity for each waste stream;

(c) an identification of the benzene concentration in each waste stream, including sampling for benzene concentration at no less than 10 waste streams per Covered Refinery consistent with the requirements of 40 C.F.R. § 61.355(c)(1) and (3); provided however, that previous analytical data or documented knowledge of waste streams may be used in accordance with 40 C.F.R. § 61.355(c)(2), for streams not sampled; and

(d) an identification of whether or not the stream is controlled consistent with the requirements of Subpart FF.

176. By no later than two (2) months after the dates set forth in Paragraph 175, COPC will submit to EPA and the Applicable Co-Plaintiff a Benzene Waste Operations NESHAP Compliance Review and Verification report ("BWON Compliance Review and Verification Report") for each Covered Refinery that sets forth the results of Phase One, including but not limited to the items identified in (a) through (d) of Paragraph 175.

177. One-Time Review and Verification of Each Covered Refinery's TAB: Phase Two of the Review and Verification Process. Based on EPA's review of the BWON Compliance Review and Verification Reports, by no later than ninety (90) days after receipt of COPC's submission of the report required by Paragraph 176, EPA may select up to twenty (20) additional waste streams at each Covered Refinery for sampling for benzene concentration. COPC will conduct the required sampling and submit the results to EPA within sixty (60) days of receipt of

EPA's request. COPC will use the results of this additional sampling to reevaluate the TAB and the uncontrolled benzene quantity and to amend the BWON Compliance Review and Verification Report, as needed. To the extent that EPA requires COPC to sample a waste stream as part of the Phase Two review that COPC chose to sample as part of the Phase One review, COPC may average the results of the two sampling events. COPC will submit an amended BWON Compliance Review and Verification Report within one-hundred twenty (120) days following the date of the completion of the required Phase Two sampling, if Phase Two sampling is required by EPA. This amended BWON Compliance Review and Verification Report will supercede and replace the originally-submitted BWON Compliance Review and Verification Report. If Phase Two sampling is not required by EPA, the originally-submitted BWON Compliance Review and Verification Report will constitute the final report.

178. Amended TAB Reports. If the results of the BWON Compliance Review and Verification Report indicate that a Covered Refinery's most recently-filed TAB report does not satisfy the requirements of Subpart FF, COPC will submit, by no later than one-hundred twenty (120) days after completion of the BWON Compliance Review and Verification Report, an amended TAB report to the applicable state agency. COPC's BWON Compliance Review and Verification Report will be deemed an amended TAB report for purposes of Subpart FF reporting to EPA.

179. Implementation of Actions Necessary to Correct Non-Compliance: Non-Compliance with the 2 or 6 Mg Options. If the results of the BWON Compliance Review and Verification Report indicate that COPC is not in compliance with the 2 Mg compliance option at the Bayway, Ferndale, or Trainer Refineries or the 6 BQ compliance option at the Alliance, Borger, LAR Carson, LAR Wilmington, Sweeny or Wood River Refineries, then, for

each such Refinery not in compliance, COPC will submit to EPA and the Applicable Co-Plaintiff, by no later than one-hundred twenty (120) days after completion of the BWON Compliance Review and Verification Report, a plan that identifies with specificity the compliance strategy and schedule that COPC will implement to ensure that subject Covered Refinery complies with the applicable compliance option as soon as practicable.

180. Implementation of Actions Necessary to Correct Non-Compliance: Rodeo and Santa Maria Refineries. If the results of the BWON Compliance Review and Verification Report indicate that the Rodeo or Santa Maria Refinery has a TAB of over 10 Mg/yr, COPC will submit to EPA, by no later than one-hundred eighty (180) days after completion of the BWON Compliance Review and Verification Report, a plan that identifies with specificity: (a) the actions that the Refinery will take to ensure that, by no later than one-hundred eighty (180) days after submission of the plan, the Refinery's TAB, for the duration of this Consent Decree, remains below 10 Mg/yr; or (b) if the Refinery cannot ensure a consistent TAB of below 10 Mg/yr within one-hundred eighty (180) days, then the compliance strategy and schedule that COPC will implement to ensure that the subject Refinery complies with the 6 BQ compliance option by no later than one year after submission of the plan.

181. Implementation of Actions Necessary to Correct Non-Compliance: Review and Approval of Plans Submitted Pursuant to Paragraphs 179 and 180. Any plans submitted pursuant to Paragraphs 179 and 180 will be subject to the approval of, disapproval of, or modification by EPA, which will act in consultation with the Applicable Co-Plaintiff. Within sixty (60) days after receiving any notification of disapproval or request for modification from EPA, COPC will submit to EPA and the Applicable Co-Plaintiff a revised plan that responds to all identified

deficiencies. Unless EPA responds to COPC's revised plan within sixty (60) days, COPC will implement the plan.

182. Implementation of Actions Necessary to Correct Non-Compliance: Certification of Compliance. By no later than thirty (30) days after completion of the implementation of all actions, if any, required pursuant to Paragraphs 179 and 180 to come into compliance with the applicable compliance option, COPC will submit its certification and a report to EPA and the Applicable Co-Plaintiff that, as to the subject Refinery, the Refinery complies with the Benzene Waste Operations NESHAP.

183. Carbon Canisters (Paragraphs 183 - 194). COPC will comply with the requirements of Paragraphs 183 - 194 at all locations at the Covered Refineries where (a) carbon canister(s) is (are) utilized as a control device under the Benzene Waste Operations NESHAP. To the extent that any applicable state or local rule, regulation, or permit contains more stringent definitions, standards, limitations, or work practices than those set forth in Paragraphs 183 - 194, then those definitions, standards, limitations or work practices will apply instead.

184. Installation of Primary and Secondary Canisters Operated in Series. By no later than September 30, 2005, COPC will replace all single carbon canisters or dual canister systems in parallel with primary and secondary carbon canisters and operate them in series.

185. Report Certifying Installation. By no later than October 31, 2005, COPC will submit a report to EPA and the Applicable Co-Plaintiff certifying the completion of the installation. The report will include a list of all locations within each Refinery where secondary carbon canisters were installed, the installation date of each secondary canister, the date that each secondary canister was put into operation, whether COPC is monitoring for breakthrough for VOCs or benzene, and the concentration of the monitored parameter that each Refinery uses as

its definition of "breakthrough." COPC must provide written notification to EPA at least thirty (30) days prior to changing either the parameter that it is monitoring for breakthrough or the concentration that it defines as "breakthrough."

186. Prohibition of Use of Single Canisters. Except as expressly provided in Paragraph 191, from the Date of Lodging of the Consent Decree through termination, COPC will not use single carbon canisters for any new units or installations that require vapor control pursuant to the Benzene Waste Operations NESHAP at any of its Refineries.

187. Definition of "Breakthrough" in Dual Canister Systems. For dual carbon canister systems in series, "breakthrough" between the primary and secondary canister is defined as any reading equal to or greater than either 50 ppm volatile organic compounds ("VOC") or 1 ppm benzene (depending upon the parameter that COPC decides to monitor). At its option, COPC may utilize a concentration for "breakthrough" at any of its Refineries that is lower than 50 ppm VOC or 1 ppm benzene. At any time, COPC may conduct a study of the effectiveness of the VOC and benzene concentration limits set forth in this Paragraph as these limits are applied at a particular Refinery. This study will last no less than two (2) years and must be performed in accordance with the guidelines established in Appendix G. COPC will submit a schedule and statement of work to EPA and the Applicable Co-Plaintiff at least ninety (90) days prior to beginning such work. COPC will submit a report to EPA and the Applicable Co-Plaintiff summarizing the results of the study within ninety (90) days of completion and may request a revision of the limits under this Paragraph, for the particular Refinery studied, based upon the results of that study and any other relevant information.

188. Monitoring for Breakthrough in Dual Canister Systems. By no later than the later of (i) September 30, 2005; or (ii) seven (7) days after the installation of any new dual canister,

COPC will start to monitor for breakthrough between the primary and secondary carbon canisters at times when there is actual flow to the carbon canister, in accordance with the frequency specified in 40 C.F.R. § 61.354(d), and will monitor the outlet of the secondary canister on a monthly basis or at its design replacement interval (whichever is less) to verify the proper functioning of the system.

189. Replacing Canisters in Dual Canister Systems. COPC will replace the original primary carbon canister (or route the flow to an appropriate alternative control device) immediately when breakthrough is detected. The original secondary carbon canister (or a fresh carbon canister) will become the new primary carbon canister and a fresh carbon canister will become the secondary canister. For purposes of this Paragraph 189, "immediately" will mean eight (8) hours for canisters of 55 gallons or less, twenty-four (24) hours for canisters greater than 55 gallons. If a Refinery chooses to define breakthrough for primary carbon canister replacement at 5 ppm or lower VOC, that Refinery may replace primary canisters of 55 gallons or less within twenty-four (24) hours of detecting breakthrough.

190. In lieu of replacing the primary canister immediately, COPC may elect to monitor the secondary canister the day breakthrough between the primary and secondary canister is identified and each calendar day thereafter. This daily monitoring will continue until the primary canister is replaced. If the monitored parameter (either benzene or VOC) is detected at the outlet of the secondary canister during this period of daily monitoring, both canisters must be replaced within eight (8) hours.

191. Limited Use of Single Canisters. COPC may utilize properly sized single canisters for short-term operations such as with temporary storage tanks or as temporary control devices. For canisters operated as part of a single canister system, breakthrough is defined for

purposes of this Decree as any reading of VOC or benzene above background. Beginning no later than March 1, 2005, COPC will monitor for breakthrough from single carbon canisters each business day (Monday through Friday, excluding legal holidays) there is actual flow to the carbon canister.

192. Replacing Canisters in Single Canister Systems under Paragraph 191. COPC will replace the single carbon canister with a fresh carbon canister, discontinue flow, or route the stream to an alternate, appropriate device immediately when breakthrough is detected. For this Paragraph 192, "immediately" will mean eight (8) hours for canisters of 55 gallons or less and twenty-four (24) hours for canisters greater than 55 gallons. If, under this Paragraph, flow to a single canister is discontinued, such canister may not be placed back into BWON vapor control service until it has been appropriately regenerated.

193. Maintaining Canister Supplies. COPC will maintain a supply of fresh carbon canisters at each Refinery at all times.

194. Records relating to Canisters. Records for the requirements of Paragraphs 183 - 193 will be maintained in accordance with 40 C.F.R. § 61.356(j)(10).

195. Annual Review. By no later than September 30, 2005, COPC will modify existing management of change procedures or develop a new program to annually review process and project information for each Refinery, including but not limited to construction projects, to ensure that all new benzene waste streams are included in each Refinery's waste stream inventory during the life of the Consent Decree.

196. Laboratory Audits (Paragraphs 196 - 200). COPC will conduct audits of all laboratories that perform analyses of COPC's benzene waste NESHAP samples to ensure that proper analytical and quality assurance/quality control procedures are followed.

197. By no later than September 30, 2005, COPC will complete at least three audits of laboratories used by it. By March 31, 2006, COPC will complete audits of all other laboratories used by it. After March 31, 2006, COPC will audit any new laboratory to be used for analyses of benzene waste NESHAP samples prior to such use.

198. If COPC has completed an audit of any laboratory on or after June 30, 2003, COPC will not be required to perform additional audits of those laboratories pursuant to Paragraph 197, above.

199. During the life of this Consent Decree, COPC will conduct subsequent laboratory audits, such that each laboratory is audited every two (2) years.

200. COPC may retain third parties to conduct these audits or use audits conducted by others as its own, but the responsibility and obligation to ensure that its Refineries comply with this Consent Decree and Subpart FF are solely COPC's.

201. Benzene Spills. Beginning on the Date of Entry, for each spill at each Covered Refinery, COPC will review such spills to determine if more than 10 pounds of benzene waste was generated in any twenty-hour (24) hour period. COPC will include the benzene generated by such spills in the TAB and in the uncontrolled benzene quantity calculations for each Refinery in accordance with the applicable compliance option as required by Subpart FF.

202. Training. By no later than April 1, 2005, COPC will develop and begin implementation of annual (i.e., once each calendar year) training for all employees asked to draw benzene waste samples at each of the Covered Refineries.

203. Training: All but the Rodeo and Santa Maria Refineries. By no later than June 30, 2005, for all Covered Refineries except Rodeo and Santa Maria, COPC will complete the development of standard operating procedures for all control equipment used to comply with

the Benzene Waste Operations NESHAP. By no later than March 31, 2006, COPC will complete an initial training program regarding these procedures for all operators assigned to this equipment. Comparable training will also be provided to any persons who subsequently become operators, prior to their assumption of this duty. Until termination of this Decree, "refresher" training in these procedures will be performed at a minimum on a three (3) year cycle.

204. Training: Rodeo and Santa Maria Refineries. The Rodeo and Santa Maria Refineries will comply with the provisions of Paragraph 203 if and when their TABs reach 10 Mg/yr. COPC will propose a schedule for training at the same time that COPC proposes a plan, pursuant to Paragraph 180, that identifies the compliance strategy and schedule that COPC will implement to come into compliance with the 6 BQ compliance option.

205. Training: Contractors. As part of COPC's training program, COPC must ensure that the employees of any contractors hired to perform the requirements of Paragraphs 202 and 203 are properly trained to implement all applicable provisions of this Section V.N.

206. Waste/Slop/Off-Spec Oil Management: Schematics. By no later than September 30, 2005, for the Bayway, Borger, Ferndale, LAR Carson, Rodeo and Santa Maria Refineries, and by no later than March 31, 2006, for the Alliance, LAR Wilmington, Sweeny, Trainer, and Wood River Refineries, COPC will submit to EPA and the Applicable Co-Plaintiff schematics for each Refinery that: (a) depict the waste management units (including sewers) that handle, store, and transfer waste, slop, or off-spec oil streams; (b) identify the control status of each waste management unit; and (c) show how such oil is transferred within the Refinery. COPC will include with the schematics a quantification of all uncontrolled waste, slop, or off-spec oil movements at the Refinery. If requested by EPA, COPC will submit to EPA within

ninety (90) days of the request, revised schematics regarding the characterization of these waste, slop, off-spec oil streams and the appropriate control standards.

207. Waste/Slop/Off-Spec Oil Management: Non-Aqueous Benzene Waste Streams. All waste management units handling non-exempt, non-aqueous benzene wastes, as defined in Subpart FF, will meet the applicable control standards of Subpart FF.

208. Waste/Slop/Off-Spec Oil Management: Aqueous Benzene Waste Streams. For purposes of calculating each Refinery's TAB pursuant to the requirements of 40 C.F.R. § 61.342(a), COPC will include all waste/slop/off-spec oil streams that become "aqueous" until such streams are recycled to a process or put into a process feed tank (unless the tank is used primarily for the storage of wastes). Appropriate adjustments will be made to such calculations to avoid the double-counting of benzene. For purposes of complying with the 2 Mg or 6 BQ compliance option, all waste management units handling benzene waste streams will either meet the applicable control standards of Subpart FF or will have their uncontrolled benzene quantity count toward the applicable 2 Mg or 6 BQ limit.

209. Benzene Waste Operations Sampling Plans: General. COPC will submit to EPA for approval, with a copy to the Applicable Co-Plaintiff, benzene waste operations sampling plans designed to describe the sampling of benzene waste streams that COPC will undertake to estimate quarterly and annual TABs (for the Refineries with TABs of under 10 Mg/yr) or quarterly and annual uncontrolled benzene quantities (for the Refineries under the 6 BQ or 2 Mg compliance options).

210. Benzene Waste Operations Sampling Plan: Due Dates for Submission. COPC will submit the sampling plans by no later than the following dates for the following Refineries:

Bayway, Borger, Ferndale LAR Carson, Rodeo, Santa Maria	12/31/05
Alliance, LAR Wilmington, Sweeny, Trainer, Wood River	6/30/06

211. Benzene Waste Operations Sampling Plans: Content Requirements.

(a) Santa Maria and Rodeo (TABs of under 10 Mg/yr). The sampling plans for the Santa Maria and Rodeo Refineries will identify:

(i) all waste streams that contributed 0.05 Mg/yr or more to the previous year's TAB calculations; and

(ii) the proposed sampling locations and methods for flow calculations to be used in calculating projected quarterly and annual TAB calculations under the terms of Paragraph 214.

The sampling plan will require COPC to take, and have analyzed, in each calendar quarter, at least three representative samples from all waste streams identified in Subparagraph (a)(i) and all locations identified in Subparagraph (a)(ii).

(b) Alliance, Borger, LAR Carson, LAR Wilmington, Sweeny, and Wood River (6 BQ Compliance Option). The sampling plans for the Alliance, Borger, LAR Carson, LAR Wilmington, Sweeny and Wood River Refineries will identify:

(i) all uncontrolled waste streams that count toward the 6 BQ calculation and contain greater than 0.05 Mg/yr of benzene; and

(ii) the proposed sampling locations and methods for flow calculations to be used in calculating projected quarterly and annual uncontrolled benzene quantity calculations under the terms of Paragraph 214.

The sampling plan will require COPC to take, and have analyzed, in each calendar quarter, at least three representative samples from all waste streams identified in Subparagraph (b)(i) and all locations identified in Subparagraph (b)(ii).

(c) Bayway, Ferndale, and Trainer (2 Mg. Compliance Option). The sampling plans for the Bayway, Ferndale, and Trainer Refineries will identify:

(i) all uncontrolled waste streams that count toward the 2 Mg calculation and contain greater than 0.05 Mg/yr of benzene;

(ii) all uncontrolled waste streams that qualify for the 10 ppmw exemption (40 C.F.R. § 61.342(c)(2)) and contain greater than 0.1 Mg/yr of benzene; and

(iii) the proposed sampling locations and methods for flow calculations to be used in calculating projected quarterly and annual uncontrolled benzene quantity calculations under the terms of Paragraph 214.

The sampling plan will require COPC to take, and have analyzed, in each calendar quarter, at least three representative samples from all waste streams identified in Subparagraphs (c)(i) and (c)(ii) and all locations identified in Subparagraph (c)(iii).

(d) Refineries that Must Implement Compliance Plans under Paragraphs 179 and 180. For any Covered Refinery that must implement a compliance plan under either Paragraph 179 or 180, COPC may submit a proposed sampling plan that does not include sampling points in locations within the Refinery that are subject to changes proposed in the compliance plan. To the extent that COPC believes that sampling at a Covered Refinery which will be under a compliance plan will not be effective until COPC completes implementation of the compliance plan, COPC, by no later than sixty (60) days prior to the due date for the submission of the sampling plan, may ask for EPA's approval in postponing submitting a sampling plan and commencing sampling until the compliance plan is completed. Unless EPA provides its approval, COPC will submit a plan by the due date in Paragraph 210 .

212. Benzene Waste Operations Sampling Plans: Timing for Implementation. COPC will implement the sampling required under each sampling plan during the first full calendar quarter after COPC submits the plan for the Refinery. COPC will continue to implement the sampling plan (i) unless and until EPA disapproves the plan; or (ii) unless and until COPC modifies the plan, with EPA's approval, under Paragraph 213.

213. Benzene Waste Operations Sampling Plans: Modifications.

(a) Changes in Processes, Operations, or Other Factors. If changes in processes, operations, or other factors lead COPC to conclude that a sampling plan for a Covered Refinery may no longer provide an accurate basis for estimating that Refinery's quarterly or annual TABs or benzene quantities under Paragraph 214, then by no later than ninety (90) days after COPC determines that the plan no longer provides an accurate measure, COPC will submit to EPA and the Applicable Co-Plaintiff a revised plan for EPA approval. In the first full calendar quarter after submitting the revised plan, COPC will implement the revised plan. COPC will continue to implement the revised plan unless and until EPA disapproves the revised plan.

(b) Bayway Refinery. By no later than sixty (60) days after completing implementation of the project identified in Paragraph 268, COPC will notify EPA and the NJDEP about whether a revised sampling plan for the Bayway Refinery is necessary. If a revised plan is necessary, the notice will include the revised plan for approval by EPA. In the first full calendar quarter after submitting the revised plan, COPC will implement the revised plan. COPC will continue to implement the revised plan unless and until EPA disapproves the revised plan.

(c) Requests for Modifications. After two (2) years of implementing a sampling plan, COPC may submit a request to EPA for approval, with a copy to the Applicable Co-Plaintiff, to

revise a Covered Refinery's sampling plan, including sampling frequency. EPA will not unreasonably withhold its consent. COPC will not implement any proposed revisions under this Subparagraph until EPA provides its approval.

214. Quarterly and Annual Estimations of TABs and Uncontrolled Benzene Quantities. At the end of each calendar quarter and based on sampling results and approved flow calculations, COPC will calculate a quarterly and projected annual: (i) TAB for the Rodeo and Santa Maria Refineries; and (ii) uncontrolled benzene quantity for the remaining Covered Refineries. In making this calculation, COPC will use the average of the three samples collected at each sampling location. If these calculations do not identify any potential violations of the benzene waste operations NESHAP, COPC will submit these calculations in the reports due under Section IX of this Decree.

215. Corrective Measures: Basis. Except as set forth in Paragraph 216, COPC will implement corrective measures at the applicable Covered Refinery if:

(a) For the Rodeo or Santa Maria Refineries, the quarterly TAB equals or exceeds 2.5 Mg or the projected annual TAB equals or exceeds 10 Mg for the then-current compliance year;

(b) For the Alliance, Borger, LAR Carson, LAR Wilmington, Sweeny, or Wood River Refineries, the quarterly uncontrolled benzene quantity equals or exceeds 1.5 Mg or the projected annual uncontrolled benzene quantity equals or exceeds 6 Mg for the then-current compliance year;

(c) For the Bayway, Ferndale, and Trainer Refineries, the quarterly uncontrolled benzene quantity equals or exceeds 0.5 Mg or the projected annual uncontrolled benzene quantity equals or exceeds 2 Mg for the then-current compliance year.

216. Exception to Implementing Corrective Measures. If COPC can identify the reason(s) in any particular calendar quarter that the quarterly and projected annual calculations result in benzene quantities in excess of those identified in Paragraph 215, and COPC can state

that it does not expect that reason or reasons to recur, then COPC may exclude the benzene quantity attributable to the identified reason(s) from the projected calendar year quantity. If that exclusion results in no potential violation of the Benzene Waste Operation NESHAP, COPC will not be required to implement corrective measures under Paragraph 217, and COPC may exclude the uncontrolled benzene attributable to the identified reason(s) in determining the applicability of Paragraph 218. At any time that COPC proceeds under this Paragraph, COPC will describe how it satisfied the conditions in this Paragraph in the reports due under Section IX of this Decree.

217. Compliance Assurance Plan. If COPC meets one or more conditions in Paragraph 215 for implementing corrective measures, then by no later than sixty (60) days after the end of the calendar quarter in which one or more of the conditions were met, COPC will submit a compliance assurance plan to EPA for approval, with a copy to the Applicable Co-Plaintiff. In that compliance assurance plan, COPC will identify the cause(s) of the potentially-elevated benzene quantities, all corrective actions that COPC has taken or plans to take to ensure that the cause(s) will not recur, and the schedule of actions that COPC will take to ensure that the subject refinery complies with the Benzene Waste Operations NESHAP for the calendar year. COPC will implement the plan unless and until EPA disapproves.

218. Third-Party Assistance. If, in two consecutive quarters, at least one of the conditions in Paragraph 215 exists at a particular Refinery, then COPC will retain a third-party contractor during the third calendar quarter to undertake a TAB study and compliance review at that Refinery. By no later than ninety (90) days after COPC receives the results of the third-party TAB study and compliance review, COPC will submit the results to EPA and the Applicable Co-Plaintiff and submit a plan and schedule for remedying any deficiencies identified in the

third-party study and compliance review. COPC will implement the plan unless and until EPA disapproves.

219. Miscellaneous Measures. The provisions of this Paragraph will apply to all Covered Refineries except the Rodeo and Santa Maria Refineries from September 30, 2005, through termination, and to the Rodeo and Santa Maria Refineries, if their TABs reach 10 Mg/yr, from such time as a compliance strategy under Paragraph 180 is implemented until termination of the Consent Decree:

(a) Conduct monthly visual inspections of all Subpart FF water traps within the Refinery's individual drain systems;

(b) Identify and mark all area drains that are segregated storm water drains;

(c) On a weekly basis, visually inspect all Subpart FF conservation vents on process sewers for detectable leaks; reset any vents where leaks are detected; and record the results of the inspections. After two (2) years of weekly inspections, and based upon an evaluation of the recorded results, COPC may submit a request to the Applicable EPA Region to modify the frequency of the inspections. EPA will not unreasonably withhold its consent. Nothing in this Paragraph 219(c) will require COPC to monitor conservation vents on fixed roof tanks. Alternatively, for conservation vents with indicators that identify whether flow has occurred, COPC may elect to visually inspect such indicators on a monthly basis and, if flow is then detected, COPC will then visually inspect that indicator on a weekly basis for four (4) weeks. If flow is detected during any two (2) of those four (4) weeks, COPC will install a carbon canister on that vent until appropriate corrective action(s) can be implemented to prevent such flow;

(d) Conduct quarterly monitoring of the controlled oil-water separators in benzene service in accordance with the "no detectable emissions" provision in 40 C.F.R. § 61.347; and

(e) Manage all groundwater remediation wastes that are covered by Subpart FF at each of its Refineries in appropriate waste management units under and as required by the Benzene Waste Operations NESHAP.

220. Recordkeeping and Reporting Requirements for this Section V.N: Outside of the Reports Required under 40 C.F.R. § 61.357 or under the Progress Report Procedures of Section

IX (Recordkeeping and Reporting). At the times specified in the applicable provisions of this Section V.N, COPC will submit, as and to the extent required, the following reports to EPA and the Applicable Co-Plaintiff:

(a) BWON Compliance Review and Verification Report (¶ 176), as amended, if necessary (¶ 177);

(b) Amended TAB Report, if necessary (¶ 178);

(c) Plan for the Alliance, Bayway, Borger, Ferndale, LAR Carson, LAR Wilmington, Sweeny, Trainer and/or Wood River Refineries to come into compliance with the applicable compliance option, if the BWON Compliance Review and Verification Reports indicate non-compliance (¶ 179);

(d) Plan for the Rodeo and/or Santa Maria Refineries to come into compliance with the 6 BQ compliance option upon discovering that its TAB equals or exceeds 10 Mg/yr through the BWON Compliance Review and Verification Report (¶ 180), or through sampling (¶ 217);

(e) Compliance certification, if necessary (¶ 182);

(f) Report certifying the completion of the installation of dual carbon canisters (¶ 185);

(g) Schematics of waste/slop/off-spec oil movements (¶ 206), as revised, if necessary;

(h) Sampling Plans (¶ 211), and revised Sampling Plans, if necessary (¶ 213);

(i) Plan to ensure that uncontrolled benzene does not equal or exceed, as applicable, 2 or 6 Mg/yr (¶ 217)

221. Recordkeeping and Reporting Requirements for this Section: As Part of Either the Reports Required under 40 C.F.R. § 61.357 or the Progress Report Procedures of Section IX (Recordkeeping and Reporting). COPC will submit the following information as part of the information submitted in either the quarterly report required pursuant to 40 C.F.R. § 61.357(d)(6) and (7) ("Section 61.357 Reports") (for all but the Rodeo and Santa Maria Refineries) or in the reports due pursuant to Section IX of this Decree:

(a) Sampling Results under Paragraphs 209 - 214. The report will include a list of all waste streams sampled, the results of the benzene analysis for each sample, and the computation of the quarterly and projected calendar year TAB (for the Rodeo and Santa Maria Refineries) and the quarterly and projected calendar year uncontrolled benzene quantity (for the remaining Covered Refineries);

(b) Training. Initial and/or subsequent training conducted in accordance with Paragraphs 202 - 205;

(c) Laboratory Audits. Initial and subsequent audits conducted pursuant to Paragraphs 196 - 200, through the calendar quarter for which the quarterly report is due, including in each such report, at a minimum, the identification of each laboratory audited, a description of the methods used in the audit, and the results of the audit.

222. At any time after two years of reporting pursuant to the requirements of Paragraph 221, COPC may submit a request to EPA to modify the reporting frequency for any or all of the reporting categories of Subparagraphs 221(a), (b), and/or (c). This request may include a request to report the previous year's projected calendar year TAB and uncontrolled benzene quantity in the Section IX report due on January 31 of each year, rather than semi-annually on January 31 and July 31 of each year. COPC will not change the due dates for its reports under Paragraph 221 unless and until EPA approves COPC's request.

223. Certifications Required in this Section V.N. Certifications required under this Section V.N will be made in accordance with the provisions of Section IX.

O. Leak Detection and Repair ("LDAR") Program Enhancements

224. General. In order to minimize or eliminate fugitive emissions of volatile organic compounds ("VOCs"), benzene, volatile hazardous air pollutants ("VHAPs"), and organic hazardous air pollutants ("HAPs") from equipment in light liquid and/or in gas/vapor service, COPC will undertake the enhancements in this Section V.O to its LDAR programs under Title 40 of the Code of Federal Regulations, Part 60, Subparts VV and GGG; Part 61, Subparts J and V;

Part 63, Subparts F, H, and CC; and applicable state or local LDAR requirements at each Refinery that is subject to this Consent Decree. The terms "equipment," "in light liquid service" and "in gas/vapor service" will have the definitions set forth in the applicable provisions of Title 40 of the Code of Federal Regulations, Part 60, Subparts VV and GGG; Part 61, Subparts J and V; Part 63, Subparts F, H and CC; and applicable state and/or local LDAR regulations. COPC is not required to include in the enhanced program described herein any equipment or units not in light liquid or gas/vapor service and not otherwise subject to any applicable federal, state, regional, or local LDAR regulation.

225. Written Refinery-Wide LDAR Program. By no later than September 30, 2005, COPC will develop and maintain, for each of the Covered Refineries, a written LDAR program for compliance with all applicable federal, state, regional, and local LDAR regulations. This written program may be specific to each Refinery and will include all process units subject to federal, state, regional, and/or local LDAR regulations ("Refinery-Wide program"). Until termination of this Decree, COPC will implement the program on a Refinery-wide basis and COPC will update each such program as may be necessary to ensure continuing compliance. Each Refinery's program will include at a minimum:

(a) An overall, Refinery leak rate goal that will be a target for achievement on a process-unit-by-process-unit basis;

(b) An identification of all equipment in light liquid and/or in gas/vapor service that has the potential to leak VOCs, HAPs, VHAPs, and benzene within process units that are owned and maintained by the Refinery;

(c) Procedures for identifying leaking equipment within process units that are owned and maintained by the Refinery;

(d) Procedures for repairing and keeping track of leaking equipment;

(e) A process for evaluating new and replacement equipment to promote consideration and installation of equipment that will minimize leaks and/or eliminate chronic leakers;

(f) A description of the Refinery's LDAR monitoring organization and a designation of the person or position that is responsible for LDAR management and that has the authority to implement LDAR improvements at the Refinery: and

(g) Procedures (*e.g.*, a Management of Change program) to ensure that components subject to LDAR requirements added to each Refinery during maintenance and construction are integrated into the LDAR program.

226. Training. By no later than December 31, 2005, COPC will commence implementation of the following training programs at each Covered Refinery:

(a) For personnel newly-assigned to LDAR responsibilities, COPC will require LDAR training prior to each employee beginning such work;

(b) For all COPC employees specifically assigned LDAR responsibilities, such as monitoring technicians, database users with permissions or rights to modify LDAR data, QA/QC personnel and the LDAR Coordinator, COPC will provide and require annual LDAR training. The first such training will be completed by not later than March 31, 2006;

(c) For all other COPC operations and maintenance personnel, such as operators and mechanics performing valve packing and designated unit supervisors reviewing for delay of repair work, COPC will provide and require completion of an initial training program that includes instruction on aspects of LDAR that are relevant to the person's duties. The first such training will be completed by not later than September 30, 2006. Refresher training in LDAR for these personnel will be performed at a minimum on a three (3) year cycle; and

(d) If contract employees are performing LDAR work, COPC's contractor will make its training information and records available to COPC.

227. LDAR Audits (Paragraphs 227 - 231). COPC will implement Refinery audits according to the schedule and requirements set forth in Paragraphs 228 - 231 to ensure each Refinery's compliance with all applicable LDAR requirements. The LDAR audits will include but not be limited to, comparative monitoring, records review to ensure monitoring and repairs

are performed in required timeframes, tagging, data management, and observation of the LDAR technicians' calibration and monitoring techniques.

228. Initial Audits. By no later than dates set forth in Paragraph 229, COPC will complete an initial third-party audit at each Covered Refinery, submit all such audit reports to EPA and the Applicable Co-Plaintiff, including an identification of any non-compliance issues, and certify that such Refinery is then in compliance with applicable LDAR requirements. For non-compliance that cannot reasonably be remedied within ninety (90) days after the dates set forth in Paragraph 229 for completing the initial third party audit, COPC will submit and adhere to an EPA-approved compliance schedule to remedy such non-compliance.

229. Third-Party Audits. COPC will retain a contractor(s) to perform a third-party audit of the Refinery's LDAR program at least once every four (4) years. The first third-party audit and report for the Alliance, Bayway, Ferndale, and Sweeny Refineries will be completed no later than December 31, 2005; the first third-party audit and report for the Borger, LAR Carson, Santa Maria, Trainer, and Wood River Refineries will be completed by no later than December 31, 2006; and the first third-party audit and report for the LAR Wilmington and Rodeo Refineries will be completed by no later than April 1, 2007.

230. Internal Audits. COPC will conduct internal audits of each Refinery's LDAR program by sending personnel familiar with the LDAR program and its requirements from one or more of COPC's other Refineries or locations to audit another COPC Refinery. COPC will complete an internal LDAR audit by no later than two (2) years from the date of the completion of the third-party audits required in Paragraphs 228 and 229. COPC will perform an internal audit of the each Refinery's LDAR program at least once every four (4) years. COPC may elect

to retain third-parties to undertake the internal audit, provided that an LDAR audit at each Refinery occurs every two (2) years.

231. Audit Every Two Years. To ensure that an audit occurs every two (2) years at each Refinery, once a Refinery's initial third-party audit is completed, the remaining third-party and internal audits at that Refinery will be separated by not more than two (2) years.

232. Implementation of Actions Necessary to Correct Non-Compliance. If the results of any of the audits conducted pursuant to Paragraphs 228 - 230 identify any areas of non-compliance, COPC will implement, as soon as practicable, all steps necessary to correct the area(s) of non-compliance and to prevent, to the extent practicable, a recurrence of the cause of such non-compliance. By no later than ninety (90) days after the completion of any audit report identifying any areas of non-compliance, COPC will submit a letter to EPA and the Applicable Co-Plaintiff certifying the completion of the necessary corrective actions. To the extent that one or more items of corrective action cannot be completed within ninety (90) days, the letter will identify the schedule for the completion of the actions. Until two (2) years after termination of the Consent Decree, COPC will retain the audit reports generated pursuant to Paragraphs 228 - 230 and will maintain a written record of the corrective actions that COPC takes in response to deficiencies identified in any audits.

233. Internal Leak Definition for Valves and Pumps. COPC will utilize the internal leak definitions set forth in Paragraphs 234 - 235 for valves and pumps in light liquid and/or gas/vapor service, unless other permit(s), regulations, or laws require the use of lower leak definitions.

234. Leak Definition for Valves. By no later than March 1, 2005, for the LAR Carson, LAR Wilmington, Rodeo, and Sweeny Refineries, and by no later than June 30, 2006, for the

Alliance, Bayway, Borger, Ferndale, Santa Maria, Trainer, and Wood River Refineries, COPC will utilize an internal leak definition of no greater than 500 ppm VOCs for each Refinery's valves in light liquid and/or gas/vapor service, excluding pressure relief devices.

235. Leak Definition for Pumps. By no later than the following dates for the following Refineries, COPC will utilize an internal leak definition of no greater than 2000 ppm for each Refinery's pumps in light liquid and/or gas/vapor service:

Alliance, Bayway, LAR Carson, LAR Wilmington, Rodeo, and Sweeny	March 1, 2005
Ferndale, Santa Maria, and Wood River	June 30, 2006
Borger and Trainer	June 30, 2007

236. Reporting of Valves and Pumps Based on the Internal Leak Definitions. For regulatory reporting purposes, COPC may continue to report leak rates in valves and pumps against the applicable regulatory leak definition, or may use the internal leak definitions specified in Paragraphs 234 - 235. The report will specify which definition is being used.

237. Recording, Tracking, Repairing and Re-Monitoring Leaks Based on the Internal Leak Definitions. COPC will record, track, repair and re-monitor all leaks in excess of the internal leak definitions of Paragraphs 234 - 235 at such time as those definitions become applicable. Unless state, regional or local rules specify more stringent first attempt periods, COPC will make a first attempt to repair and re-monitor all components other than valves covered under Paragraph 238 within five (5) calendar days and will either complete the repairs and re-monitor the leaks or place such component on the Refinery's delay of repair list within thirty (30) days.

238. Initial Attempt at Repair of Valves. By no later than March 31, 2005, COPC will make an "initial attempt" to repair any valve that has a reading greater than 200 ppm of VOCs, excluding control valves and components that LDAR monitoring personnel are not authorized to repair. COPC or its designated contractor will make this "initial attempt" at repair and will re-monitor the leak within one (1) day of identification. If the re-monitored leak reading is greater than the applicable leak definition, COPC may delay further repairs up to five (5) days after initial identification in order to assess the persistence of the leak (re-monitoring again). Unless the re-monitored leak rate is greater than the applicable leak definition, no further action will be necessary. If COPC can demonstrate with sufficient, statistically significant monitoring data over a period of at least two (2) years that "initial attempts" to repair at 200 ppm worsen or do not improve refinery leak rates, COPC may request EPA to reconsider or amend this requirement.

239. LDAR Monitoring Frequency: Pumps. When the lower internal leak definition for pumps in light liquid and/or gas/vapor service becomes applicable under Paragraph 235 and unless more frequent monitoring is required by applicable federal, state, regional and/or local requirements, COPC will monitor pumps at the internal leak definition on a monthly basis.

240. LDAR Monitoring Frequency: Valves. When the lower internal leak definition for valves becomes applicable under Paragraph 234 and unless more frequent monitoring is required by applicable federal, state, regional and/or local requirements, COPC will monitor valves in light liquid and/or gas/vapor service at the internal leak definition on a quarterly basis (other than difficult to monitor or unsafe to monitor valves). No monitoring skip periods are permitted.

241. Monitoring after Turnaround or Maintenance. COPC will have the option of monitoring affected valves and pumps within process unit(s) after completing a documented maintenance, startup, or shutdown activity without having the results of the monitoring count as a scheduled monitoring activity, provided COPC monitors according to the following schedule:

(a) For events involving 1000 or fewer valves and pumps, monitor within one week of the documented maintenance, startup or shutdown activity;

(b) For events involving greater than 1000 but fewer than 5000 valves and pumps, monitor within two (2) weeks of the documented maintenance, startup, or shutdown activity;

(c) For events involving greater than 5000 valves and pumps, monitor within four (4) weeks of the documented maintenance, startup, or shutdown activity.

242. Electronic Storing and Reporting of LDAR Data. COPC has and will continue to maintain an electronic database for storing and reporting LDAR data at all of the Covered Refineries. By no later than February 1, 2005, the electronic database will include data identifying the date and time of the monitored event, and the operator and instrument used in the monitored event.

243. Electronic Data Collection During LDAR Monitoring and Transfer Thereafter. By no later than January 31, 2005, for all but the Trainer and Wood River Refineries, and by no later than January 1, 2006, for the Trainer and Wood River Refineries, COPC will use data loggers and/or electronic data collection devices during all Method 21 LDAR monitoring. COPC, or its designated contractor, will use its/their best efforts to transfer, by the end of the next business day electronic data from electronic data logging devices to the electronic database of Paragraph 242. For all Method 21 monitoring in which an electronic data collection device is used, the collected monitoring data will include a time and date stamp and identify the operator/monitoring technician and the monitoring instrument used. COPC may use paper logs

where necessary or more feasible for Method 21 monitoring (e.g., small rounds, re-monitoring, or when data loggers are not available or broken), and will record, at a minimum, the identity of the technician, the date, the technicians' daily monitoring starting and ending times, and an identification of the monitoring equipment. COPC will use its best efforts to transfer any manually recorded monitoring data to the electronic database of Paragraph 242 within seven (7) days of monitoring.

244. QA/QC of LDAR Data. By no later than March 31, 2005, COPC, or a third party contractor retained by COPC, will develop and begin implementing procedures for quality assurance/quality control ("QA/QC") reviews of all data generated by LDAR monitoring technicians. COPC periodically will ensure that monitoring data provided by its technicians is reviewed daily for QA/QC by the technicians. At least once per calendar quarter, COPC will perform a QA/QC review of COPC's and any contractor's monitoring data which will include, but not be limited to: number of components monitored per technician, time between monitoring events, and abnormal data patterns.

245. Calibration. COPC will conduct all calibrations of LDAR monitoring equipment using methane as the calibration gas, in accordance with 40 C.F.R. Part 60, EPA Reference Test Method 21.

246. Calibration Drift Assessment. By no later than February 1, 2005, COPC will conduct calibration drift assessments of LDAR monitoring equipment at the end of each monitoring shift, at a minimum. COPC will conduct the calibration drift assessment using approximately 500 ppm calibration gas. If any calibration drift assessment after the initial calibration shows a negative drift of more than 10% from the previous calibration, COPC will re-monitor all valves that were monitored since the last calibration that had a reading greater than

100 ppm and will re-monitor all pumps that were monitored since the last calibration that had a reading greater than 500 ppm. COPC will retain its calibration records for two (2) years after performing the calibration.

247. Delay of Repair. By no later than January 1, 2006, COPC will take the following actions for any equipment that it intends and is allowed to place on the "delay of repair" list under applicable regulations:

(a) Require electronic or written sign-off by the unit supervisor within 30 days of identifying that a piece of equipment is leaking at a rate greater than the applicable leak definition that such equipment qualifies for delayed repair under applicable regulations,

(b) Include equipment that is placed on the "delay of repair" list in COPC's regular LDAR monitoring,

(c) Use its best efforts to isolate and repair pumps identified as leaking at the applicable regulatory leak definition, or, when applicable pursuant to Paragraph 235, 2000 ppm or greater.

248. Delay of Repair: Valves Only. In addition to the requirements of Paragraph 247, by no later than January 1, 2006, COPC will take the following actions for leaking valves, other than control valves and pressure relief valves, that COPC is required to repair under applicable regulations:

(a) Use the "drill and tap"(or equivalent) repair method, rather than place a valve on the "delay of repair" list, if it is leaking at a rate of 10,000 ppm or greater, unless COPC can demonstrate that there is a safety or major environmental concern by attempting to repair the leak in this manner;

(b) Perform a first, and if necessary a second, "drill and tap" (or equivalent) repair method within thirty (30) days after detecting a leak of 10,000 ppm or greater;

(c) After two (2) unsuccessful attempts to repair a leaking valve through the "drill and tap" (or equivalent) repair method, COPC may place the leaking valve on its "delay of repair" list.

249. New Method of Repair for Leaking Valves. If a new valve repair method not currently in use by the refining industry is planned to be used by COPC, COPC will advise EPA prior to implementing such a method or, if prior notice is not practicable, as soon as practicable after implementation.

250. Chronic Leakers. A valve will be classified as a "chronic leaker" under this Paragraph if it leaks above 5000 ppm twice in any consecutive four (4) quarters, unless the valve has not leaked in the six (6) consecutive quarters prior to the relevant process unit turnaround. Following the identification of a "chronic leaker" non-control valve, COPC will replace, repack, or perform similarly effective repairs on the chronic leaker during the next process unit turnaround occurring at the later of June 30, 2005, or six (6) months after the Date of Entry of this Decree. After Entry of this Decree, COPC and EPA may agree in writing to modifications of the chronic leaker requirements of this Paragraph 250 and any such modifications will be considered non-material under Paragraph 437.

251. Recordkeeping: Refinery-Wide LDAR Program. COPC will retain a copy of each Refinery's Refinery-Wide LDAR Program developed pursuant to Paragraph 225 in the files of each Covered Refinery.

252. Reporting: As Part of the First Progress Report Due under the Consent Decree. Consistent with the requirements of Section IX (Recordkeeping and Reporting), at the later of: (i) the first progress report due under the Consent Decree; or (ii) the first progress report in which the requirement becomes due, COPC will include the following:

(a) A certification of the implementation of the "first attempt at repair" program of Paragraph 238;

(b) A certification of the implementation of QA/QC procedures for review of data generated by LDAR technicians as required by Paragraph 244;

(c) An identification of the position at each Refinery responsible for LDAR performance as required by Paragraph 225(f);

(d) A certification of the development of a tracking program for new valves and pumps added during maintenance and construction as required by Paragraph 225(g);

(e) A certification of the implementation of the calibration drift assessment procedures of Paragraphs 245 - 246;

(f) A certification of the implementation of the "delay of repair" procedures of Paragraphs 247 - 248.

253. Progress Report for the First Calendar Quarter of Each Year: Reporting on Audits. COPC will report on the audits and corrective actions (Paragraphs 227 - 232) in the first progress report due under Section IX (Reporting and Recordkeeping) that COPC submits in a new year. In that report, COPC will identify which refineries were audited in the previous year, the identity of the auditors, a summary of the audit findings, a summary of the corrective actions taken for any deficiencies identified, and the schedule for implementation of the corrective actions. In lieu of including this information in the progress reports, COPC may submit the audit reports themselves in January of each year for the previous year's audits.

254. Reporting: Progress Reports due under Section IX. Commencing with the first progress report due in 2006, and annually thereafter in the progress reports due in January under Section IX of this Decree, COPC will report on the following:

(a) Training. Information identifying the measures that COPC took to comply with the provisions of Paragraph 226; and

(b) Monitoring. The following information on LDAR monitoring for each quarter of the prior year: (i) a list of the process units monitored; (ii) the number of valves and pumps monitored in each process unit; (iii) the number of valves and pumps found leaking; (iv) the number of "difficult to monitor" pieces of equipment monitored; (v) a list of all equipment currently on the "delay of repair" list and the date each valve or pump was placed on the list; (vi) the number of initial attempts to repair valves which were not completed within one day as required under

Paragraph 238; (vii) the number of first attempts not completed within five (5) days as required under Paragraph 237; (viii) the number of valves and pumps not repaired or placed on the Refinery's delay of repair list within thirty (30) days as required under Paragraph 237; (ix) the number of first "drill and tap" repair attempts not completed within thirty (30) days as required under Paragraph 248; and (x) the number of valve chronic leakers not repaired as required under Paragraph 250.

255. Certifications Required in this Section V.O. Certifications required under this Section V.O will be made in accordance with the provisions of Section IX.

P. Incorporation of Consent Decree Requirements into Federally Enforceable Permits

256. Obtaining Permit Limits for Consent Decree Emission Limits That Are Effective Upon the Date of Lodging. By no later than June 30, 2005, COPC will submit complete applications to the applicable state/local agency to incorporate the emission limits and standards required by the Consent Decree that are effective as of the Date of Lodging of the Consent Decree into federally enforceable minor or major new source review permits or other permits that will ensure that the underlying emission limit or standard survives the termination of this Consent Decree. In light of the permitting program in the State of Louisiana, COPC will submit to LDEQ's consolidated permitting program, under the same time frame as that of the previous sentence, appropriate applications, amendments, and/or supplements to ensure that the emission limits and standards required by this Consent Decree that are effective as of the Date of Lodging survive termination of this Consent Decree. Following submission of the complete permit applications (or, for the Alliance Refinery, following submission of the appropriate applications, amendments and/or supplements), COPC will cooperate with the applicable state/local agency by promptly submitting to the applicable state/local agency all information that the applicable state/local agency seeks following its receipt of the permit materials. Upon issuance of such

permits or in conjunction with such permitting, COPC will file any applications necessary to incorporate the requirements of those permits into the Title V permit for the relevant COPC Refinery. COPC does not waive its right to appeal more stringent emission limits or standards than those required by this Consent Decree.

257. Obtaining Permit Limits For Consent Decree Emission Limits That Become Effective After the Date of Lodging/Date of Entry. As soon as practicable, but in no event later than ninety days after the effective date or establishment of any emission limits and standards under this Consent Decree, COPC will submit complete applications to the applicable state/local agency to incorporate those emission limits and standards into federally enforceable minor or major new source review permits or other permits that will ensure that the underlying emission limit or standard survives the termination of this Consent Decree. In light of the permitting program in the State of Louisiana, COPC will submit to LDEQ's consolidated permitting program, under the same time frame as that of the previous sentence, appropriate applications, amendments, and/or supplements so as to ensure that the emission limits and standards required by this Consent Decree survive termination of this Consent Decree. Following submission of the complete permit application (or, for the Alliance Refinery, following submission of the appropriate applications, amendments and/or supplements), COPC will cooperate with the applicable state/local agency by promptly submitting to the applicable state/local agency all information that the applicable state/local agency seeks following its receipt of the permit materials. Upon issuance of such permit or in conjunction with such permitting, COPC will file any applications necessary to incorporate the requirements of that permit into the Title V permit of the appropriate COPC Refinery. COPC does not waive its right to appeal more stringent emission limits or standards than those required by this Consent Decree.

258. Mechanism for Title V Incorporation. The Parties agree that the incorporation of any emission limits or other standards into the Title V permits for COPC's Covered Refineries as required by Paragraphs 256 and 257 will be in accordance with the applicable state or local Title V rules. The Parties agree that incorporation of the requirements of this Decree may be by "amendment" under 40 C.F.R. § 70.7(d) and analogous state Title V rules, where allowed by state law.

259. Construction Permits. COPC agrees to use best efforts to obtain all required, federally enforceable permits and state/local agency permits for the construction of the pollution control technology and/or the installation of equipment necessary to implement the affirmative relief and environmental projects set forth in this Section V and in Section VIII. To the extent that COPC must submit permit applications for this construction or installation to the applicable state/local agency, COPC will cooperate with the applicable state/local agency by promptly submitting to the applicable state/local agency all information that the applicable state/local agency seeks following its receipt of the permit application. This Paragraph is not intended to prevent COPC from applying to the applicable state/local agency for or otherwise using an available pollution control project exemption.

VI. EMISSION CREDIT GENERATION

260. Objectives. The intent of this Section generally is to prohibit COPC from using the emissions reductions ("CD Emissions Reductions") that will result from the installation and operation of the controls required by this Consent Decree, including the controls required in Section VIII, for the purpose of netting reductions or emission offset credits, but also to describe the circumstances which are not prohibited.

261. Prohibition. COPC will not generate or use any NO_x, SO_2, PM, VOC, or CO emissions reductions that result from any projects conducted or controls utilized to comply with this Consent Decree (including the controls required by Section VIII) as netting reductions or emission offset credits in any PSD, major non-attainment and/or minor New Source Review ("NSR") permit or permit proceeding.

262. Outside the Scope of the Prohibition. Nothing in this Section VI is intended to prohibit COPC from seeking to:

(a) utilize or generate netting reductions or emission offset credits from refinery units that are covered by this Consent Decree to the extent that the proposed netting reductions or emission offset credits represent the difference between the emissions limitations set forth in this Consent Decree for these refinery units and the more stringent emissions limitations that COPC may elect to accept for these refinery units in a permitting process;

(b) utilize or generate netting reductions or emission offset credits for refinery units that are not subject to an emission limitation pursuant to this Consent Decree;

(c) utilize or generate netting reductions or emission offset credits for Combustion Units on which Qualifying Controls, as defined in Paragraph 94, have been installed, provided that such reductions are not included in COPC's demonstration of compliance with the requirements of Paragraphs 95 and 98 of this Consent Decree;

(d) utilize emissions reductions from the installation of controls required by this Consent Decree in determining whether a project that includes both the installation of controls under this Consent Decree and other construction that occurs at the same time and is permitted as a single project triggers major New Source Review requirements;

(e) utilize CD Emission Reductions for a particular Covered Refinery's compliance with any rules or regulations designed to address regional haze or the non-attainment status of any area (excluding PSD and Non-Attainment New Source Review rules, but including, for example, NO_x or VOC RACT Rules, RECLAIM, the Northeast Ozone Transport Region NO_x Budget Program, and the Houston/Galveston Area NO_x SIP) that apply to the particular Covered Refinery. Notwithstanding the preceding sentence, and except as between the LAR Carson Plant and the LAR Wilmington Plant (for which trading and selling as between

the two Plants is allowed), COPC will not trade or sell any CD Emissions Reductions;

(f) generate, sell or trade NO_x or SO_2 credits that are not CD Emission Reductions for purposes of the RECLAIM program at the LAR Wilmington or Carson Plants. CD Emissions Reductions do not include any of the emissions reductions generated at the LAR Wilmington FCCU by the use of: (i) NO_x Additives from the Date of Lodging to June 30, 2006; and/or (ii) SO_2 Reducing Catalyst Additives from the Date of Lodging until December 31, 2008. Between June 30, 2006, and the date of the establishment of a NO_x limit pursuant to Paragraphs 50 - 51, and between December 31, 2008, and the date of the establishment of a SO_2 limit pursuant to Paragraphs 69 - 70, reductions from the LAR Wilmington FCCU in NO_x and SO_2 emissions, respectively, achieved through the use of the additives required by this Consent Decree are CD Emissions Reductions. After the dates that NO_x and SO_2 limits are established for the LAR Wilmington FCCU pursuant to Paragraphs 50 - 51 and Paragraphs 69 - 70, reductions beyond those limits are not CD Emissions Reductions and may be sold or traded.

263. Distilling West. Notwithstanding any other provision in this Section VI, COPC may not use any credits resulting from the emissions reductions at Distilling West required in this Consent Decree in any emissions banking, trading or netting program for PSD, major non-attainment New Source Review ("NSR") or minor NSR, or in any comparable state or local regulatory program.

VII. MODIFICATIONS TO IMPLEMENTATION SCHEDULES

264. Modifications Relating to Securing Permits or Approvals (in states where permits are characterized as "Approvals").

(a) Timely Submitting Complete Permit Applications and Exercising Best Efforts. For any work under Sections V or VIII of this Consent Decree that requires a federal, state, regional and/or local permit or approval (including but not limited to air or wastewater permits or approvals), COPC will be responsible for submitting in a timely fashion complete applications for federal, state, regional and local permits and approvals for work and activities required so that permit or approval decisions can be made in a timely fashion. COPC will use its best efforts to:

(i) submit permit applications (e.g., applications for permits to construct, operate, or their equivalent) that comply with all applicable requirements; and (ii) secure permits after filing the applications, including timely provision of additional information, if requested.

(b) Notification. If it appears that the failure of a governmental entity to act upon a timely-submitted, complete permit application may delay COPC's performance of work according to an applicable implementation schedule, COPC will notify EPA and the Applicable Co-Plaintiff of any such delays as soon as COPC reasonably concludes that the delay could affect its ability to comply with the implementation schedule set forth in this Consent Decree. COPC will propose for approval by EPA a modification to the applicable schedule of implementation. EPA, in consultation with the Applicable Co-Plaintiff, will not unreasonably withhold its consent to requests for modifications of schedules of implementation if the requirements of Paragraph 264(a) are met.

(c) Procedures for Modifying Dates. The provisions of Paragraph 437 will govern modifications under this Paragraph 264.

(d) Stipulated Penalties Inapplicable. Stipulated penalties will not accrue nor be due and owing during any period between a scheduled implementation date and an approved modification to such date; provided however, that EPA and the Applicable Co-Plaintiff will retain the right to seek stipulated penalties if EPA does not approve a modification to a date or dates.

(e) Force Majeure Inapplicable. The failure of a governmental entity to act upon a timely-submitted, complete permit application will not constitute a force majeure event triggering the requirements of Section XIV; instead, Paragraph 264 will apply.

265. Modifications Relating to Securing EPA Approval under this Consent Decree.

(a) For requirements of this Decree where COPC is prohibited from commencing an action prior to receiving EPA approval, COPC will use its best efforts to submit materials that comply with all applicable requirements of this Consent Decree and to ensure EPA's timely response to the applicable submission. If it appears that the failure by EPA to timely provide an approval that is a condition precedent to subsequent action(s) will delay COPC's performance of subsequent action(s), COPC and EPA will modify all relevant deadlines as appropriate in light of the delay. The provisions of Paragraph 437 will govern modifications under this Paragraph 265. If EPA fails to timely act on a modification(s) required by this Subparagraph, stipulated penalties will not accrue for the period up to and including the earlier of: (i) the modified date(s) that EPA eventually determines; or (ii) the modified date(s) that this Court establishes if COPC pursues dispute resolution under Section XV.

(b) For requirements of this Consent Decree that are subject to EPA approval but for which COPC's subsequent actions are not expressly conditioned upon receipt of EPA approval, COPC will commence and continue with such subsequent actions even without receipt of EPA approval. If, during the course of such continuing COPC actions, EPA disapproves in whole or in part of the manner in which COPC has proceeded, extensions of all relevant deadlines may result by agreement of the parties. The provisions of Paragraph 437 will govern modifications under this Paragraph 265. Stipulated penalties will not accrue nor be due and owing during any period between a scheduled implementation date and an approved modification to such date; provided however, that EPA and the Applicable Co-Plaintiff will retain the right to seek stipulated penalties if EPA does not approve a modification to a date or dates.

(c) Force Majeure Inapplicable. The failure of EPA to provide a required approval in a timely manner will not constitute a force majeure event triggering the requirements of Section XIV; instead Paragraph 265 will apply.

266. Modifications Relating to Commercial Unavailability of Control Equipment and/or Additives.

(a) COPC's General Obligation. COPC will be solely responsible for compliance with any deadline or the performance of any work described in Sections V and VIII of this Consent Decree that requires the acquisition and installation of control equipment, including NOx Reducing and SO_2 Reducing Catalyst Additives.

(b) Notification. If it appears that the commercial unavailability of any control equipment may delay COPC's performance of work according to an applicable implementation schedule, COPC will notify EPA and the Applicable Co-Plaintiff of any such delays as soon as COPC reasonably concludes that the delay could affect its/their ability to comply with the implementation schedule set forth in this Consent Decree. COPC will propose for approval by EPA, after consultation with the Applicable Co-Plaintiff, a modification to the applicable schedule of implementation.

(c) Additional Notice Requirements and Requirements relating to Contacting Vendors. Prior to the notice required by Paragraph 266(b), COPC must have contacted a reasonable number of vendors of such equipment or additive and obtained a written representation (or equivalent communication to EPA) from the vendor that the equipment or additive is commercially unavailable. In the notice, COPC will reference Paragraph 266 of this Consent Decree, identify the milestone date(s) it/they contend it/they will not be able to meet, provide the EPA and the Applicable Co-Plaintiff with written correspondence to the vendor

identifying efforts made to secure the control equipment, and describe the specific efforts COPC has taken and will continue to take to find such equipment or additive.

(d) Dispute Resolution. Section XV ("Retention of Jurisdiction/Dispute Resolution") will govern the resolution of any claim of commercial unavailability. EPA, in consultation with the Applicable Co-Plaintiff, will not unreasonably withhold its consent to requests for modifications of schedules of implementation if the requirements of Paragraph 266 are met.

(e) Procedures for Modifying Dates. The provisions of Paragraph 437 will govern modifications under this Paragraph 266.

(f) Stipulated Penalties Inapplicable. Stipulated penalties will not accrue nor be due and owing during any period between an originally scheduled implementation date and an approved modification to such date; provided however, that EPA and the Applicable Co-Plaintiff will retain the right to seek stipulated penalties if EPA does not approve a modification to a date or dates.

(g) Force Majeure Inapplicable. The failure by COPC to secure control equipment or additives will not constitute a force majeure event triggering the requirements of Section XIV; instead, Paragraph 266 will apply.

VIII. SUPPLEMENTAL/BENEFICIAL ENVIRONMENTAL PROJECTS

267. In accordance with the requirements set forth in this Section VIII, and with the schedules set forth in this Section VIII and/or the applicable Appendices, COPC will spend no less than Ten Million One-Hundred Thousand Dollars ($10,100,000) to implement the Supplemental/Beneficial Environmental Projects ("SEPs/BEPs") described in Paragraphs 268 - 272. COPC may carry out its responsibilities for the SEPs/BEPs identified in Paragraphs 268 - 272 directly or through contractors selected by COPC.

268. Controlling Emissions from the API Separator at the Bayway Refinery.

(a) By no later than April 1, 2006, COPC will submit to NJDEP, with respect to the Bayway Refinery, all applicable permit applications necessary to implement a project to control volatile organic compound emissions from (i) the preflumes associated with Channels 3 through 7 of the API separator ("Preflumes"); (ii) Channels 3 through 7 of the API separator ("Channels 3 through 7"); and (iii) the Corrugated Plate Separator ("CPS"). As part of those permit applications, COPC will include a list of all waste streams that are directed to the API Separator and all waste streams that are directed elsewhere, including an identification of the destination of the waste streams that are not directed to the API. In the list of waste streams, COPC will include VOC composition, VOC concentration, and stream flow rates.

(b) By no later than December 31, 2008, COPC will have completed implementation of the control project required in Subparagraph (a). The equipment installed to meet the requirement of Subparagraph (a) will have a VOC control/removal efficiency of at least 95%. The equipment installed either (i) will cover the currently-existing Preflumes, Channels 3 through 7, and the CPS; or (ii) will replace these structures with a controlled system that is covered or enclosed.

(c) COPC will spend no less than Eight Million Dollars ($8,000,000) for the project identified in this Paragraph.

269. Project Relating to the Wood River Refinery. By no later than December 31, 2006, COPC will purchase a foam aerial apparatus to be located at the Wood River Refinery at a cost of no less than Nine-Hundred Thousand Dollars ($900,000). COPC will maintain this apparatus, will train its personnel on its use, and will make it available for incidents within its

own facilities and also for mutual aid response for facilities and communities within the vicinity of the Wood River Refinery.

270. Project Relating to the Trainer Refinery. By no later than June 30, 2005, COPC will donate funds in the amount of Four-Hundred Thousand Dollars ($400,000) to the Delaware County, Pennsylvania, Local Emergency Planning Committee ("LEPC"). The LEPC will expend these funds by no later than December 31, 2006. The funds will be used to: (i) purchase radio systems; and (ii) develop training and educational materials for the establishment of an Emergency Broadcast System AM and or FM radio channel. The channel will be activated by the LEPC and will broadcast emergency information to Delaware County residents.

271. Project Relating to the Alliance Refinery. COPC will donate funds in the total amount of Four-Hundred Thousand Dollars ($400,000) to the LDEQ to support the collection and recyling or disposal of household hazardous waste materials at selected locations throughout the State of Louisiana. COPC will donate Two-Hundred Thousand Dollars ($200,000) by no later than June 30, 2005; One-Hundred Thousand Dollars ($100,000) by no later than June 30, 2006; and One-Hundred Thousand Dollars ($100,000) by no later than June 30, 2007. LDEQ will hold no less than two (2) household hazardous materials collection events in Plaquemines Parish.

272. Projects Relating to the Ferndale Refinery.

(a) By no later than June 30, 2005, COPC will purchase a new fire truck to be located at the Ferndale Refinery at a cost of no less than One-Hundred Fifty-Thousand Dollars ($150,000). COPC will maintain the fire truck, will train its personnel on its use, and will make it available for incidents within COPC's own facilities and also for mutual aid response for facilities and communities within the vicinity of the Ferndale Refinery.

(b) By no later than December 31, 2005, COPC will enter into a contractual arrangement with the Building Performance Center of the Whatcom County Opportunity Council/Skagit County Housing Authority so as to provide for the replacement of approximately forty (40) old, fireplaces/wood stoves with new, clean-burning fireplaces or certified wood stoves. The stoves will be provided free of charge to low-income households that could otherwise not afford the units. By no later than December 31, 2006, COPC will have spent One-Hundred, Twenty-Five Thousand Dollars ($125,000) on this project, and the number of wood stoves replaced will be adjusted upward or downward, as appropriate, so as to limit to $125,000 the amount that COPC will be required to spend.

(c) By no later than December 31, 2005, COPC will enter into a contractual arrangement with the International Council for Local Environmental Initiatives so as to provide for the development of baseline emissions inventories and emissions reductions targets for participating cities, towns, and counties within NWCAA's jurisdiction for the purpose of developing local action plans to save energy and reduce emissions. The project will result in an evaluation of quantifiable emission reductions and a projection of future emission reductions. By no later than December 31, 2006, COPC will have spent One-Hundred, Twenty-Five Thousand Dollars ($125,000) on this project, and the number of participating municipalities/counties will be calculated so as to limit to $125,000 the amount that COPC will be required to spend.

273. Reductions in Sulfur Dioxide Emissions Relating to the Bayway Refinery.

(a) During each calendar year from the Date of Lodging through December 31, 2013, that the Bayway Refinery has a Scheduled Turnaround of its TGU and does not also take a full plant shutdown, COPC will secure reductions in sulfur dioxide emissions in that calendar year. COPC will use best efforts to secure such reductions first from units at its Bayway Refinery;

second, from sources operating within the State of New Jersey; and, as a last option, from the open market. If COPC secures reductions outside the Bayway Refinery, COPC must ensure that those emissions reductions are not otherwise required by law and are permanently retired. Provided that COPC complies with its obligation to use best efforts in the manner set forth in this Paragraph, COPC may obtain part of the reductions from the Bayway Refinery, part from other New Jersey sources, and/or part from the open market.

(b) COPC must secure the following reductions in sulfur dioxide emissions, depending upon the source from which the reductions arise:

Source	Number of Tons of Reductions in the Calendar Year
Bayway Refinery	110
Other New Jersey Source(s)	330
Open Market	880

If COPC secures reductions from any combination of the three options, COPC will satisfy the following inequality:

$$x + y/3 + z/8 \geq 110$$

Where: x = SO_2 TPY reductions from the Bayway Refinery

y = SO_2 TPY reductions from other New Jersey sources

z = SO_2 TPY reductions from the open market

(c) To the extent that COPC secures some or all of the required SO_2 reductions from the Bayway Refinery, the baseline will be the facility-wide SO_2 emissions in the calendar year immediately preceding the year of the Scheduled TGU Turnaround or such other twelve (12) month period as is representative of normal operating conditions.

(d) To the extent that COPC secures some or all of the required SO_2 reductions from other New Jersey sources, the reductions will be calculated on a baseline-actual to future-allowable for each unit from which such reductions are secured. The new lower allowable limit(s) will be incorporated into a federally-enforceable permit that meets the requirements of Paragraph 256.

(e) In the applicable SEP progress reports required in Paragraph 277, COPC will include information that identifies the year in which COPC expects to take and/or has taken a Scheduled Turnaround of the Bayway TGU; the baseline facility-wide SO_2 emissions, including the dates of the baseline and the basis for the calculations; the sources from which COPC secured the necessary reductions, including a description of the best efforts that COPC used to comply with the requirements of Subparagraph 273(a); and the amounts secured from each source, including any necessary calculations.

274. Reductions in Sulfur Dioxide Emissions from the Wood River Refinery.

(a) During each calendar year from the Date of Lodging through December 31, 2013, that the Wood River Refinery has a Scheduled Turnaround of its TGU, COPC will reduce actual facility-wide SO_2 emissions, exclusive of SO_2 emissions from the SRP and TGU, by 400 tons from the previous calendar year's total facility-wide SO_2 emissions. If COPC obtains the reductions through the use of SO_2 Reducing Catalyst Additives, the reductions will be calculated as the difference between the combined actual emissions of Wood River FCCUs 1 and 2 (as measured by the use of a CEMS and exclusive of any startup, shutdown, or Malfunction emissions) from the calendar year preceding the Scheduled TGU Turnaround and the calendar year in which the Scheduled TGU Turnaround occurs. Use of SO_2 Reducing Catalyst Additives for this purpose is not subject to the restrictions contained in the catalyst additive program in

Section V. COPC may not use for purposes of the 400 ton reduction required by this Paragraph reductions resulting from the implementation of projects required by this Consent Decree, including the installation of wet gas scrubbers on Wood River FCCUs 1 and/or 2, except as allowed by Paragraph 274(b).

(b) If COPC installs and begins operation of a wet gas scrubber on Wood River FCCU 2 on or before December 31, 2010, then COPC will not be required to obtain the 400 ton reduction set forth in Paragraph 274(a) for any Scheduled Turnarounds of the TGU following December 31, 2010.

(c) In the applicable SEP/BEP progress reports required in Paragraph 277, COPC will include information that identifies the year in which COPC expects to take and/or has taken a Scheduled Turnaround of the Wood River TGU; the baseline facility-wide SO_2 emissions, including the basis for the calculations; and the facility-wide SO_2 emissions in the year of the Scheduled TGU Turnaround, including the basis for the calculations.

275. COPC is responsible for the satisfactory completion of the SEPs/BEPs required under this Consent Decree in accordance with this Section VIII. Upon completion of the SEPs/BEPS set forth in Paragraphs 268 - 272, COPC will submit to EPA and the Applicable State/Local Co-Plaintiff a cost report certified as accurate under penalty of perjury by a responsible corporate official. If COPC does not expend the entire projected cost of the applicable SEP/BEP as set forth in this Section VIII, COPC will pay a stipulated penalty equal to the difference between the amount expended as demonstrated in the certified cost report(s) and the projected cost. The stipulated penalty will be paid as provided in Paragraph 377 (Payment of Stipulated Penalties) of the Consent Decree.

276. By signing this Consent Decree, COPC certifies that it is not required, and has no liability under any federal, state, regional or local law or regulation or pursuant to any agreements or orders of any court, to perform or develop any of the projects identified in Paragraphs 268 - 274. COPC further certifies that it has not applied for or received, and will not in the future apply for or receive: (1) credit as a Supplemental Environmental Project or other penalty offset in any other enforcement action for the projects set forth in Paragraphs 268 - 274; (2) credit for any emissions reductions resulting from the projects set forth in Paragraphs 268 - 274 in any federal, state, regional or local emissions trading or early reduction program; or (3) a deduction from any federal, state, regional, or local tax based on its participation in, performance of, or incurrence of costs related to the projects set forth in Paragraphs 268 - 272.

277. COPC will include in each report required by Paragraph 279 a progress report for each SEP/BEP being performed pursuant to this Section VIII. In addition, the report required by Paragraph 279 of this Consent Decree for the period in which each project identified in Paragraphs 268 - 274 is completed will contain the following information with respect to such projects:

(a) A detailed description of each project as implemented;

(b) A brief description of any significant operating problems encountered, including any that had an impact on the environment, and the solutions for each problem;

(c) Certification that each project has been fully implemented pursuant to the provisions of this Consent Decree; and

(d) A description of the environmental and public health benefits resulting from implementation of each project (including quantification of the benefits and pollutant reductions, if feasible).

278. COPC agrees that in any public statements regarding these SEPs/BEPs, COPC must clearly indicate that these projects are being undertaken as part of the settlement of an enforcement action for alleged violations of the Clean Air Act and corollary state statutes.

IX. REPORTING AND RECORDKEEPING

279. Beginning with the first full calendar quarter after the Date of Entry of the Consent Decree, COPC will submit to EPA and the Applicable Co-Plaintiffs within thirty (30) days after the end of each calendar quarter through 2005, and semi-annually on January 31 and July 31 thereafter until termination of this Consent Decree a progress report for each of the Covered Refineries. Each report will contain, for the relevant Covered Refinery, the following:

(a) progress report on the implementation of the requirements of Section V (Affirmative Relief/Environmental Projects) at the relevant Covered Refinery;

(b) a summary of the emissions data for the relevant Covered Refinery that is specifically required by the reporting requirements of Section V of this Consent Decree for the period covered by the report;

(c) a description of any problems anticipated with respect to meeting the requirements of Section V of this Consent Decree at the relevant Covered Refinery;

(d) a description of the status of all SEPs/BEPs (if any) being conducted at the Covered Refinery;

(e) any such additional matters as COPC believes should be brought to the attention of EPA and the Applicable Co-Plaintiff.

The report will be certified by either the person responsible for environmental management at the appropriate Covered Refinery or by a person responsible for overseeing implementation of this Decree across COPC as follows:

> I certify under penalty of law that this information was prepared under my direction or supervision by personnel qualified to properly gather and evaluate the information submitted. Based on my directions and after reasonable inquiry of the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

X. CIVIL PENALTY

280. In satisfaction of the civil claims asserted by the United States and the Co-Plaintiffs in the complaint filed in this matter, within thirty (30) days of the Date of Entry of the Consent Decree, COPC will pay a civil penalty of Four Million, Five-Hundred Twenty-Five Thousand Dollars ($4,525,000) as follows: (1) Three Million Dollars ($3,000,000) to the United States; (2) Two-Hundred Thousand Dollars ($200,000) to the State of Illinois; (3) Six-Hundred Twenty-Five Thousand Dollars ($625,000) to the State of Louisiana; (4) One-Hundred Thousand Dollars ($100,000) to the Commonwealth of Pennsylvania; and (5) Six-Hundred Thousand Dollars ($600,000) to the Northwest Clean Air Agency.

281. Payment of monies to the United States will be made by Electronic Funds Transfer ("EFT") to the United States Department of Justice, in accordance with current EFT procedures, referencing USAO File Number 2004 V 02117, DOJ Case Number 90-5-2-1-06722/1, and the civil action case name and case number of this action in the Southern District of Texas. The costs of such EFT will be the responsibility of COPC. Payment will be made in accordance with instructions provided to COPC by the Financial Litigation Unit of the U.S. Attorney's Office for the Southern District of Texas. Of the total amount paid to the United States, $100,000 will be directed to EPA's Hazardous Substance Superfund. Any funds received after 11:00 a.m. (EST) will be credited on the next business day. COPC will provide notice of payment, referencing USAO File Number 2004 V 02117, DOJ Case Number 90-5-2-1-06722/1, and the civil action case name and case number to the Department of Justice and to EPA, as provided in Paragraph 433 (Notice).

282. Payment of the civil penalty owed to the State of Illinois under Paragraph 280 will be made by certified or corporate check made payable to the "Illinois Environmental Protection

Agency," designated to the Illinois Environmental Protection Trust Fund, and sent to the following address:

Illinois Environmental Protection Agency
Fiscal Services Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

The name and number of the case and the COPC Wood River Refinery Federal Employer Identification Number (FEIN) 73-0400345, shall appear on the check. A copy of the certified or corporate check and the transmittal letter will be sent to:

James L. Morgan
Assistant Attorney General
Environmental Bureau
500 South Second Street
Springfield, Illinois 62706

283. Payment of the civil penalty owed to the State of Louisiana under Paragraph 280 will be made by certified or corporate check made payable to the "Louisiana Department of Environmental Quality" and sent to the following address:

Darryl Serio
Fiscal Director
Office of Management and Finance
LDEQ
P.O. Box 4303
Baton Rouge, Louisiana 70821-4303

284. Payment of the civil penalty owed to the Commonwealth of Pennsylvania under Paragraph 280 will be made by certified or corporate check made payable to the "Commonwealth of Pennsylvania, Clean Air Fund" and sent to the following address:

Air Quality Compliance Specialist
Pennsylvania Department of Environmental Protection
2 East Main Street
Norristown, PA 19401

285. Payment of the civil penalty owed to the "Northwest Clean Air Agency" under Paragraph 280 will be made by certified or corporate check made payable to the Northwest Clean Air Agency and sent to the following address:

Director
Northwest Clean Air Agency
1600 South Second St.
Mount Vernon, WA 98273-5202

286. The civil penalty set forth herein is a penalty within the meaning of Section 162(f) of the Internal Revenue Code, 26 U.S.C. § 162(f), and, therefore, COPC will not treat these penalty payments as tax deductible for purposes of federal, state, regional, or local law.

287. Upon the Date of Entry of the Consent Decree, the Consent Decree will constitute an enforceable judgment for purposes of post-judgment collection in accordance with Federal Rule of Civil Procedure 69, the Federal Debt Collection Procedure Act, 28 U.S.C. §§ 3001-3308, and other applicable federal authority. The United States and the Co-Plaintiffs will be deemed judgment creditors for purposes of collecting any unpaid amounts of the civil and stipulated penalties and interest.

XI. STIPULATED PENALTIES

288. COPC will pay stipulated penalties to the United States and to the Applicable Co-Plaintiff for each failure by COPC to comply with the terms of this Consent Decree as provided herein. Stipulated penalties will be calculated in the amounts specified in Paragraphs 289 through 375. Stipulated penalties under Paragraphs 289, 296, 301, 305 will not start to accrue until there is non-compliance with the concentration-based, rolling average emission limits identified in those Paragraphs for five percent (5%) or more of the applicable unit's operating time during any calendar quarter. For those provisions where a stipulated

penalty of either a fixed amount or 1.2 times the economic benefit of delayed compliance is available, the decision of which alternative to seek will rest exclusively within the discretion of the United States or the Applicable Co-Plaintiff. Where a single event triggers more than one stipulated penalty provision in this Consent Decree, only the provision containing the higher stipulated penalty will apply.

A. Non-Compliance with Requirements for NO_x Emissions Reductions from FCCUs

289. For failure to meet any emissions limit for NO_x set forth in Paragraph 13, or any emissions limit proposed by COPC or established by EPA (final or interim) for NO_x pursuant to Paragraphs 50 - 51, per day, per unit: $750 for each calendar day in a calendar quarter on which the short-term rolling average exceeds the applicable limit; and $2,500 for each calendar day in a calendar quarter on which the specified 365-day rolling average exceeds the applicable limit.

290. For failure to timely commence, complete, or comply with the SNERT or Enhanced SNCR: (i) design requirements (Paragraphs 15 - 20; 29 - 30); (ii) optimization study requirements (Paragraphs 21 - 22; 31 - 33); or (iii) demonstration requirements (Paragraphs 23 - 26; 34 - 36), including the submission of the Optimization and Demonstration Reports, per unit, per day:

Period of Delay or Non-Compliance	Penalty per day
1st through 30th day after deadline	$1,000
31st through 60th day after deadline	$1,500
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

291. For failure to timely surrender the operating permit for the Distilling West FCCU pursuant to Paragraphs 40, 60, and 81:

Period of Delay	Penalty per day
1st through 30th day after deadline	$200
31st through 60th day after deadline	$500
Beyond 60th day after deadline	$1,000

292. For restarting the Distilling West FCCU in violation of the requirements of Paragraphs 40, 60, and 81: $27,500 per day.

293. For failure to comply with any requirements of the Low NO_x Combustion Promoter and NO_x Reducing Catalyst Additive protocol, as set forth in Paragraphs 41 - 47 and Appendix D, including submission of the Optimization and Demonstration Reports, per unit, per day:

Period of Delay or Non-Compliance	Penalty per day
1st through 30th day after deadline	$1,000
31st through 60th day after deadline	$1,500
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

294. For failure to prepare and/or submit written deliverables required by Subsection V.A per day (except that, where deliverables are specifically identified in those paragraphs covered by the stipulated penalty provisions of Paragraphs 290 or 293, this Paragraph will apply in lieu of Paragraphs 290 or 293 where more than one provision is potentially applicable):

Period of Delay	Penalty per day
1st through 30th day after deadline	$200
31st through 60th day after deadline	$500
Beyond 60th day after deadline	$1,000

295. For failure to install, certify, calibrate, maintain, and/or operate a NO_x CEMS as required by Paragraph 54, per unit per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day after deadline	$1,000
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

B. Non-Compliance with Requirements for SO_2 Emissions Reductions from FCCUs

296. For each failure to meet SO_2 emission limits (final or interim) set forth in Paragraphs 56 or 57, or SO_2 emissions limits proposed by COPC or established by EPA (final or interim) pursuant to Paragraphs 69 - 70, per unit, per day: $750 for each calendar day in a calendar quarter on which the specified 7-day rolling average exceeds the applicable limit; $2,500 for each calendar day in a calendar quarter on which the specified 365-day rolling average exceeds the applicable limit.

297. For failure to comply with any requirement of the SO_2 Reducing Catalyst Additives protocol, as set forth in Paragraphs 61 - 66 and Appendix D, including submission of the Optimization and Demonstration Reports, per unit, per day:

Period of Delay or Non-Compliance	Penalty per day
1st through 30th day after deadline	$1,000
31st through 60th day after deadline	$1,500
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of the delayed compliance, whichever is greater

298. For failure to prepare and/or submit written deliverables required by Subsection V.B, per day (except that, where deliverables are specifically identified in those paragraphs covered by Paragraph 297, this Paragraph will apply in lieu of Paragraph 297 where both provisions are potentially applicable):

Period of Delay	Penalty per day
1st through 30th day after deadline	$200
31st through 60th day after deadline	$500
Beyond 60th day after deadline	$1,000

299. For failure to install, certify, calibrate, maintain, and/or operate a SO_2 CEMS as required by Paragraph 73, per unit, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day after deadline	$1,000
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

300. For failure to comply with the plan required by Paragraph 74 for operating the FCCUs in the event of a Hydrotreater Outage, per unit, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$250
31st through 60th day after deadline	$1,000
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

C. Non-Compliance with Requirements for PM Emissions Reductions from FCCUs

301. For each failure to meet applicable PM emission limits for the COPC FCCUs as set forth in Paragraphs 77, 78, and 80 per day, per unit: $3,000 for each calendar day in a calendar quarter on which the Covered Refinery exceeds the emission limit.

302. For each failure to comply with the PM emission limits, performance standards, or performance tests at the Ferndale FCCU as set forth in Paragraph 79(a) and (b): $3,000 for each calendar day.

303. For failure to submit an application to amend the PSD permit for the Ferndale FCCU to the Washington Department of Ecology as required in Paragraph 79(c):

Period of Non-Compliance	Penalty per day
1st through 30th day after deadline	$200
31st through 60th day after deadline	$1,000
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

304. For failure to submit written deliverables, or to conduct required stack tests, pursuant to Paragraph 83:

Period of Non-Compliance	Penalty per day
1st through 30th day after deadline	$200
31st through 60th day after deadline	$500
Beyond 60th day after deadline	$1,000

D. Non-Compliance with Requirements for CO Emissions Reductions from FCCUs

305. For each failure to meet the applicable CO emission limits for the COPC FCCUs as set forth in Paragraph 84: $750 for each calendar day in a calendar quarter on which the specified 1-hour rolling average exceeds the applicable limit; and $2,500 for each calendar day in a calendar quarter on which the specified 365-day rolling average exceeds the applicable limit.

306. For failure to install, certify, calibrate, maintain, and/or operate a CO CEMS as required by Paragraph 86, per unit, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day after deadline	$1,000
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

E. Non-Compliance with Requirements for NSPS Applicability of FCCU Catalyst Regenerators

307. For failure to comply with NSPS Subparts A and J limits for at each of COPC's FCCU regenerators as required by Paragraph 87, per pollutant per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$1,000
31st through 60th day	$2,000
Beyond 60th day	$3,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

308. For failure to install, certify, calibrate, maintain, and/or operate a COMS to monitor Opacity as required by Paragraph 90 per unit, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day after deadline	$1,000
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

F. Non-Compliance with Requirements for NO_x Emissions Reductions from Combustion Units

309. For failure to install Qualifying Controls on Combustion Units and/or to submit permit applications sufficient to comply with the requirements of Paragraphs 95 and 98, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$2,500
31st through 60th day after deadline	$6,000
Beyond 60th day after deadline	$10,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

310. For failure to install Qualifying Controls on Combustion Units as required by Paragraph 99 by the dates set forth in that Paragraph, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$2,500
31st through 60th day after deadline	$6,000
Beyond 60th day after deadline	$10,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

311. For failure to comply with the applicable monitoring requirements as set forth in Paragraphs 100 and 101, per unit, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day after deadline	$1,000
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.

312. For failure to submit any written deliverable required by Subsection V.F, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$200
31st through 60th day after deadline	$500
Beyond 60th day	$1,000

313. For each failure to meet NO_x emission limits proposed by COPC pursuant to Paragraph 95, per day, per unit: $500 for each calendar day in a calendar quarter on which the emissions exceed the applicable limit.

314. For failure to install all of the required control devices on the Distilling West Combustion Units by the applicable deadline as required by Paragraph 105: $75,000 per quarter.

315. For failure to conduct emissions tests at the Distilling West Combustion Units under Paragraph 108, or to submit information required pursuant to Paragraphs 106 and 107, $5000 per month per unit. (This Paragraph will apply in lieu of Paragraph 312, where both provisions are potentially applicable.)

316. For failure to meet the emission limits established pursuant to Paragraph 108: $1600 per day for each Distilling West Combustion Unit with a capacity of 150 mmBTU/hr (HHV) or greater; $800 per day for each Distilling West Combustion Unit with a capacity of less than 150 mmBTU/hr (HHV).

317. For failure to submit the required permit applications or amendments to incorporate the emissions limits established pursuant to Paragraph 108: $2,000 per permit application or amendment per month.

318. For each failure to meet any emission limit for NO_x from the Bayway Crude Stillheater pursuant to Paragraph 109:

Period of Non-Compliance	Penalty per day
1st through 30th day after deadline	$1,000
31st through 60th day after deadline	$2,000
Beyond 60th day after deadline	$5,000

319. For failure to install, certify, calibrate, maintain, and/or operate a NO_x CEMS as required by Paragraph 109 per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day after deadline	$1,000
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

G. Non-Compliance with Requirements for SO_2 Emissions Reductions from Heaters and Boilers

320. For burning any fuel gas that contains H_2S in excess of the applicable requirements of NSPS Subparts A and J in one or more heaters or boilers at the Covered Refineries after the date set forth in this Decree on which the respective heater or boiler becomes an "affected facility" subject to NSPS Subparts A & J, per event, per day in a calendar quarter:

Period of Non-Compliance	Penalty per day
1st through 30th day	$2,500
Beyond 31st day	$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

321. For burning Fuel Oil in a manner inconsistent with the requirements of Paragraphs 117 and 118, per unit, per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$1,750
Beyond 31st day	$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

H. Non-Compliance with Requirements for NSPS Applicability of Sulfur Recovery Plants

322. For failure to comply with the NSPS Subpart J emission limits at the Covered SRPs pursuant to Paragraph 120, per unit, per day in a calendar quarter:

Period of Non-Compliance	Penalty per day
1st through 30th day	$1,000
31st through 60th day	$2,000
Over 60 days	$3,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

323. For failure to eliminate, control, and/or include and monitor all sulfur pit emissions in accordance with the requirements of Paragraph 123, per unit, per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$1,000
31st through 60th day	$1,750
Beyond 60th day	$4,000 or an amount equal to 1.2 times the economic benefit of delayed compliance whichever is greater

324. For failure to comply with the monitoring requirements of Paragraph 124, per unit, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day after deadline	$1,500
Beyond 60th day after deadline	$2,000

325. For failure to develop and comply with the Preventive Maintenance and Operation Plan as specified in Paragraph 125, per Refinery, per day:

Period of Delay or Non-Compliance	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day	$1,500
Over 60 days	$2,000

326. For failure to complete optimization studies and reports at the Alliance, Bayway, Santa Maria, and Wood River SRPs as specified in Paragraphs 127 - 128, or for failure to complete the optimization studies and reports at the Bayway and Santa Maria TGUs as specified in Paragraphs 130 - 132, per Refinery, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day	$1,500
Over 60 days	$2,000

327. For failure to comply with the performance standards under the terms and conditions of Paragraph 129 during the second or third Scheduled Turnaround of the TGU at the Alliance, Bayway, Santa Maria, or Wood River Refineries, per Refinery, per day: $2,500. Stipulated penalties will not apply during the first Scheduled Turnaround of the TGUs at the Alliance, Bayway, Santa Maria, or Wood River Refineries occurring after the Date of Lodging.

328. For failure to provide any written deliverable required by Section V.H., other than the Optimization Studies and the PMO Plans, per deliverable, per day (except as specified in this Paragraph, this Paragraph will apply in lieu of any other potentially applicable stipulated penalties for late deliverables required by Section V.H.):

Period of Delay	Penalty per day
1st through 30th day after deadline	$200
31st through 60th day	$500
Over 60 days	$1,000

I. Non-Compliance with Requirements for NSPS Applicability of the Sulfuric Acid Plant at LAR Wilmington

329. For failure to comply with the NSPS Subpart H emission limits at the Sulfuric Acid Plant at LAR Wilmington pursuant to Paragraph 136, per day in a calendar quarter:

Period of Non-Compliance	Penalty per day
1st through 30th day	$1,000
31st through 60th day	$2,000
Over 60 days	$3,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

J. Non-Compliance with Requirements for NSPS Applicability of Flaring Devices

330. For failure to submit the Compliance Plan for Flaring Devices as required by Paragraph 141:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day	$1,500
Over 60 days	$2,000

331. For failure to comply with the compliance method selected by COPC for the Flaring Devices listed on Appendix A after the date on which COPC has certified compliance pursuant to Paragraphs 142 or 143:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day	$1,500
Over 60 days	$2,000

Provided, however, that if stipulated penalties could be assessed under both this Paragraph and Paragraph 332, Paragraph 332 will apply.

K. **CERCLA/EPCRA** – None applicable.

L. **Non-Compliance with Requirements for Control of Acid Gas Flaring Incidents and Tail Gas Incidents**

332. For AG Flaring Incidents and/or Tail Gas Incidents for which Section V.L makes COPC liable for stipulated penalties:

Tons Emitted in Acid Gas Flaring Incident or Tail Gas Incident	Length of Time from Commencement of Flaring within the Acid Gas Flaring Incident to Termination of Flaring within the Acid Gas Flaring Incident is 3 hours or less; Length of Time of the Tail Gas Incident is 3 hours or less	Length of Time from Commencement of Flaring within the Acid Gas Flaring Incident to Termination of Flaring within the Acid Gas Flaring Incident is greater than 3 hours but less than or equal to 24 hours; Length of Time of the Tail Gas Incident is greater than 3 hours but less than or equal to 24 hours	Length of Time of Flaring within the Acid Gas Flaring Incident is greater than 24 hours; Length of Time of the Tail Gas Incident is greater than 24 hours
5 Tons or less	$500 per Ton	$750 per Ton	$1,000 per Ton
Greater than 5 Tons, but less than or equal to 15 Tons	$1,200 per Ton	$1,800 per Ton	$2,300 per Ton, up to, but not exceeding, $27,500 in any one calendar day

Greater than 15 Tons	$1,800 per Ton, up to, but not exceeding, $27,500 in any one calendar day	$2,300 per Ton, up to, but not exceeding, $27,500 in any one calendar day	$27,500 per calendar day for each calendar day over which the Acid Gas Flaring Incident or Tail Gas Incident lasts

For purposes of calculating stipulated penalties pursuant to this Paragraph 332, only one cell within the matrix will apply. Thus, for example, for a Flaring Incident in which the flaring starts at 1:00 p.m. and ends at 3:00 p.m., and for which 14.5 tons of sulfur dioxide are emitted, the penalty would be $17,400 (14.5 x $1,200); the penalty would not be $13,900 [(5 x $500) + (9.5 x $1,200)]. For purposes of determining which column in the table set forth in this Paragraph applies under circumstances in which flaring occurs intermittently during a Flaring Incident, the flaring will be deemed to commence at the time that the flaring that triggers the initiation of a Flaring Incident commences, and will be deemed to terminate at the time of the termination of the last episode of flaring within the Flaring Incident. Thus, for example, for flaring within a Flaring Incident that (i) starts at 1:00 p.m. on Day 1 and ends at 1:30 p.m. on Day 1; (ii) recommences at 4:00 p.m. on Day 1 and ends at 4:30 p.m. on Day 1; (iii) recommences at 1:00 a.m. on Day 2 and ends at 1:30 a.m. on Day 2; and (iv) no further flaring occurs within the Flaring Incident, the flaring within the Flaring Incident will be deemed to last 12.5 hours -- not 1.5 hours -- and the column for flaring of "greater than 3 hours but less than or equal to 24 hours" will apply.

333. For failure to timely submit any report required by Section V.L or for submitting any report that does not substantially conform to its requirements:

Period of Delay	Penalty per day
1st through 30th day after deadline	$750
31st through 60th day after deadline	$1,500
Beyond 60th day after deadline	$3,000

334. For those corrective action(s) with respect to Acid Gas Flaring, Tail Gas Incidents, or Hydrocarbon Flaring which COPC: (i) agrees to undertake following receipt of an objection by EPA pursuant to Paragraph 156; or (ii) is required to undertake following dispute resolution, then, from the date of EPA's receipt of COPC's report under Paragraph 153 of this Consent Decree until the date that either: (i) a final agreement is reached between EPA and COPC regarding the corrective action; or (ii) a court order regarding the corrective action is entered, COPC will be liable for stipulated penalties as follows:

(a)

Period of Delay	Penalty per day
1st through 120th day after deadline	$50
121st through 180th day after deadline	$100
181st through 365th day after deadline	$300
Beyond 365th day	$3,000

or

(b) 1.2 times the economic benefit resulting from COPC's failure to implement the corrective action(s)

335. For failure to complete any corrective action with respect to Acid Gas Flaring or Tail Gas Incidents under Paragraphs 154 - 157 of this Decree in accordance with the schedule for such corrective action agreed to by COPC or imposed on COPC pursuant to the dispute

resolution provisions of this Decree (with any such extensions thereto as to which EPA and COPC may agree in writing):

Period of Delay	Penalty per day
1st through 30th day after deadline	$1,000
31st through 60th day after deadline	$2,000
Beyond 60th day after deadline	$5,000

M. Non-Compliance with Requirements for Control of Hydrocarbon Flaring Incidents

336. For each failure to perform a Root Cause Analysis or submit a written report or perform corrective actions as required by Paragraph 167 for a Hydrocarbon Flaring Incident:

Period of Delay or Non-Compliance	Penalty per day per Incident
1st through 30th day	$500
31st through 60th day	$1,500
Beyond 60th day	$3,000

N. Non-Compliance with Requirements for Benzene Waste Operations NESHAP Program Enhancements

337. For failure to comply with the requirements of Paragraph 174 relating to Ferndale's compliance with the benzene waste operations NESHAP, per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$1,000
31st through 60th day	$2,000
Beyond 60th day	$3,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

338. For failure to complete the BWON Compliance Review and Verification Reports as required by Paragraphs 176 and, if necessary, 177:

$7,500 per month, per refinery.

339. For failure to submit a plan that provides for actions necessary to correct non-compliance as required by Paragraphs 179 or 180 or for failure to implement the actions necessary to correct non-compliance and to certify compliance as required by Paragraph 182, per refinery:

Period of Delay	Penalty per day
1st through 30th day after deadline	$1,250
31st through 60th day after deadline	$3,000
Beyond 60th day	$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

340. For failure to comply with the requirements set forth in Paragraphs 183 - 193 for use, monitoring and replacement of carbon canisters: $1,000 per incident of non-compliance, per day.

341. For failure to submit or maintain any records or materials required by Paragraphs 183 - 194 of this Consent Decree: $2,000 per record or submission.

342. For failure to establish an annual review program to identify new benzene waste streams as required by Paragraph 195: $2,500 per month, per refinery.

343. For failure to perform laboratory audits as required by Paragraphs 196 - 200: $5,000 per month, per audit.

344. For failure to implement the training requirements as set forth in Paragraph 202 - 205: $10,000 per quarter, per Refinery.

345. For failure to meet the applicable control standards of Subpart FF for waste management units handling non-exempt, non-aqueous wastes as required by Paragraph 207: $10,000 per month per waste management unit.

346. For failure to submit any plans or other deliverables required by Paragraphs 209 - 217, or for failure to comply with the requirements of Paragraph 218, when applicable, for retaining third-party assistance: $10,000 per month, per refinery.

347. For failure to conduct sampling in accordance with the sampling plans required by Paragraphs 209 - 211: $5,000 per week, per stream, or $30,000 per quarter, per stream, whichever is greater, but not to exceed $150,000 per quarter, per refinery.

348. For failure to conduct monthly visual inspections of all Subpart FF water traps as required by Paragraph 219(a): $500 per drain not inspected.

349. For failure to identify/mark segregated stormwater drains as required in Paragraph 219(b): $1,000 per week, per drain.

350. For failure to monitor Subpart FF conservation vents as required by Paragraph 219(c): $500 per vent not monitored.

351. For failure to conduct monitoring of the controlled oil-water separators in benzene service as required by Paragraph 219(d): $1,000 per month, per unit.

352. For failure to submit the written deliverables required by Subsection V.N (except that, where a more specific stipulated penalty applies pursuant to any of the Paragraphs of this Subsection XI.N, then that specific stipulated penalty will apply in lieu of this Paragraph): $1,000 per week, per deliverable.

353. If it is determined through federal, state, regional, or local investigation that any Covered Refinery has failed to include all benzene waste streams in its TAB calculation submitted pursuant to Paragraph 176, COPC will pay the following, per waste stream:

Waste Stream	Penalty
for waste streams < 0.03 Mg/yr	$250
for waste streams between 0.03 and 0.1 Mg/yr	$1,000
for waste streams between 0.1 and 0.5 Mg/yr	$5,000
for waste streams > 0.5 Mg/yr	$10,000

O. Non-Compliance with Requirements for Leak Detection and Repair Program Enhancements

354. For failure to develop an LDAR Program as required by Paragraph 225: $3,500 per week, per refinery.

355. For failure to implement the training programs specified in Paragraph 226: $10,000 per month, per program, per refinery.

356. For failure to conduct any of the audits required by Paragraphs 227 - 231: $5,000 per month, per audit.

357. For failure to implement any actions necessary to correct non-compliance as required by Paragraph 232:

Period of Delay	Penalty per day
1st through 30th day after deadline	$1,250
31st through 60th day after deadline	$3,000
Beyond 60th day	$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

358. For failure to perform monitoring utilizing the lower internal leak rate definitions as specified in Paragraph 234 - 235: $100 per component, but not greater than $10,000 per month, per process unit.

359. For failure to repair and re-monitor leaks, as required by Paragraph 237, in excess of the lower leak definitions specified in Paragraphs 234 - 235: $500 per component, but not greater than $10,000 per month, per refinery.

360. For failure to implement the "initial attempt" repair program in Paragraph 238: $100 per valve, but not greater than $10,000 per month, per refinery.

361. For failure to implement and comply with the LDAR monitoring program as required by Paragraphs 239 - 241: $100 per component, but not greater than $10,000 per month, per unit.

362. For failure to use dataloggers or maintain electronic data as required by Paragraph 242 - 243: $5,000 per month, per refinery.

363. For failure to implement the QA/QC procedures described in Paragraph 244: $10,000 per month, per refinery.

364. For failure to designate and/or maintain an individual as accountable for LDAR performance as required in Paragraph 225(f), or for failure to implement the maintenance tracking program in Paragraph 225(g): $3,750 per week, per refinery.

365. For failure to conduct the calibration drift assessments or remonitor valves and pumps based on calibration drift assessments in Paragraphs 245 - 246: $100 per missed event, per refinery.

366. For failure to comply with the requirements for repair set forth at Paragraphs 247 - 248: $5,000 per valve or pump, per incident of non-compliance.

367. For failure to comply with the requirement for chronic leakers set forth in Paragraph 250: $5,000 per valve.

368. For failure to submit any written deliverables required by Subsection V.O (except that, where a more specific stipulated penalty applies pursuant to any of the Paragraphs of this Subsection XI.O, then that specific stipulated penalty will apply in lieu of this Paragraph): $1,000 per week, per report.

369. If it is determined through a federal, state, regional, or local investigation that COPC has failed to include any valves or pumps in its LDAR program, COPC will pay $175 per component that it failed to include.

P. Non-Compliance with Requirements Related to Incorporating Consent Decree Requirements into Federally-Enforceable Permits

370. For each failure to submit an application as required by Paragraphs 256 or 257:

Period of Non-Compliance	Penalty per day
1st through 30th day after deadline	$800
31st through 60th day after deadline	$1,500
Beyond 60th day	$3,000

Q. Non-Compliance with Requirements Related to Supplemental/Beneficial Environmental Projects

371. For failure to comply with any of the requirements of Paragraph 268:

Period of Non-Compliance	Penalty per day
1st through 30th day after deadline	$1,000
31st through 60th day after deadline	$2,000
Beyond 60th day after deadline	$5,000

372. For failure to timely complete implementation of the SEPs/BEPs required by Paragraphs 269 - 272:

Period of Non-Compliance	Penalty per day
1st through 30th day after deadline	$1,000
31st through 60th day after deadline	$1,500
Beyond 60th day after deadline	$2,000

373. For failure to comply with the requirements for SO_2 emissions reductions at the Bayway and Wood River Refineries in Paragraphs 273 - 274:

Period of Non-Compliance	Penalty per day
1st through 30th day after deadline	$ 500
31st through 60th day after deadline	$1,000
Beyond 60th day after deadline	$1,500

R. Non-Compliance with Requirements for Reporting and Recordkeeping

374. For failure to submit reports as required by Section IX, per report, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$300
31st through 60th day after deadline	$1,000
Beyond 60th day	$2,000

S. Non-Compliance with Requirements for Payment of Civil Penalties

375. For COPC's failure to pay the civil penalties as specified in Section X of this Consent Decree, COPC will be liable for $15,000 per day plus interest on the amount overdue at the rate specified in 28 U.S.C. § 1961(a).

T. General Provisions Related to Stipulated Penalties

376. Demand for Stipulated Penalties. COPC will pay stipulated penalties upon written demand by the United States or the Applicable Co-Plaintiff by no later than sixty (60) days after COPC receives such demand. Demand from one agency will be deemed a demand from all applicable agencies, but the agencies will consult with each other prior to making a demand. A demand for the payment of stipulated penalties will identify the particular violation(s) to which the stipulated penalty relates, the stipulated penalty amount that EPA or the Applicable Co-Plaintiff is demanding for each violation (as can be best estimated), the calculation method underlying the demand, and the grounds upon which the demand is based. After consultation with each other, the United States and the Applicable Co-Plaintiff may, in their unreviewable discretion, waive payment of any portion of stipulated penalties that may accrue under this Consent Decree.

377. Payment of Stipulated Penalties. Stipulated penalties owed by COPC will be paid 50% to the United States and 50% to the Applicable Co-Plaintiff. Stipulated penalties owing to the United States of under $10,000 will be paid by check and made payable to "U.S. Department of Justice," referencing DOJ Number 90-5-2-1-06722/1 and USAO File Number 2004 V 02117, and delivered to the U.S. Attorney's Office in the Southern District of Texas, 910 Travis St., Suite 1500, Houston, Texas 77208. Stipulated penalties owing to the United States of $10,000 or more and stipulated penalties owing to Co-Plaintiff Illinois, Louisiana, New Jersey, or NWCAA will be paid in the manner set forth in Section X (Civil Penalty) of this Consent Decree. Stipulated penalties owing to Co-Plaintiff New Jersey will be paid by corporate check made payable to "Treasurer, State of New Jersey," and sent to the Administrator, Air Compliance and Enforcement, NJDEP, at the address set forth in Paragraph 433.

378. Stipulated Penalties Dispute. Stipulated penalties will begin to accrue on the day after performance is due or the day a violation occurs, whichever is applicable, and will continue to accrue until performance is satisfactorily completed or until the violation ceases. However, in the event of a dispute over stipulated penalties, stipulated penalties will not accrue commencing upon the date that COPC files a petition with the Court under Paragraph 395 of this Decree if COPC has placed the disputed amount demanded in a commercial escrow account with interest. If the dispute thereafter is resolved in COPC's favor, the escrowed amount plus accrued interest will be returned to COPC; otherwise, EPA and the Applicable Co-Plaintiff will be entitled to the amount that was determined to be due by the Court, plus the interest that has accrued in the escrow account on such amount.

379. The United States and the Co-Plaintiffs reserve the right to pursue any other non-monetary remedies to which they are legally entitled, including but not limited to, injunctive relief, for COPC's violations of this Consent Decree. Where a violation of this Consent Decree is also a violation of the Clean Air Act, its regulations, or a federally-enforceable state law, regulation, or permit, the United States will not seek civil penalties where it already has demanded and secured stipulated penalties from COPC for the same violations nor will the United States demand stipulated penalties from COPC for a Consent Decree violation if the United States has commenced litigation under the Clean Air Act for the same violations. Where a violation of this Consent Decree is also a violation of state law, regulation, or a permit, the Applicable Co-Plaintiff will not seek civil penalties where it already has demanded and secured stipulated penalties from COPC for the same violations, nor will the Applicable Co-Plaintiff demand stipulated penalties from COPC for a Consent Decree violation if the Applicable Co-Plaintiff has commenced litigation under the Clean Air Act for the same violations.

XII. INTEREST

380. COPC will be liable for interest on the unpaid balance of the civil penalty specified in Section X, and for interest on any unpaid balance of stipulated penalties to be paid in accordance with Section XI. All such interest will accrue at the rate established pursuant to 28 U.S.C. § 1961(a) -- i.e., a rate equal to the coupon issue yield equivalent (as determined by the Secretary of Treasury) of the average accepted auction price for the last auction of 52-week U.S. Treasury bills settled prior to the Date of Lodging of the Consent Decree. Interest will be computed daily and compounded annually. Interest will be calculated from the date payment is due under the Consent Decree through the date of actual payment. For purposes of this Paragraph 380, interest pursuant to this Paragraph will cease to accrue on the amount of any stipulated penalty payment made into an interest bearing escrow account as contemplated by Paragraph 378 of the Consent Decree. Monies timely paid into escrow will not be considered to be an unpaid balance under this Section.

XIII. RIGHT OF ENTRY

381. Any authorized representative of EPA or the Applicable Co-Plaintiff, upon presentation of credentials, will have a right of entry upon the premises of the facilities of the Covered Refineries at any reasonable time for the purpose of monitoring compliance with the provisions of this Consent Decree, including inspecting plant equipment and systems, and inspecting all records maintained by COPC required by this Consent Decree or deemed necessary by EPA or the Applicable Co-Plaintiff to verify compliance with this Consent Decree. Except where other time periods specifically are noted, COPC will retain such records for the period of the Consent Decree. Nothing in this Consent Decree will limit the authority of EPA or the

Applicable Co-Plaintiff to conduct tests, inspections, or other activities under any statutory or regulatory provision.

XIV. FORCE MAJEURE

382. If any event occurs or fails to occur which causes or may cause a delay or impediment to performance in complying with any provision of this Consent Decree, COPC will notify EPA and the Applicable Co-Plaintiff in writing as soon as practicable, but in any event within twenty (20) business days of the date when COPC first knew of the event or should have known of the event by the exercise of due diligence. In this notice, COPC will specifically reference this Paragraph 382 of this Consent Decree and describe the anticipated length of time the delay may persist, the cause or causes of the delay, and the measures taken or to be taken by COPC to prevent or minimize the delay and the schedule by which those measures will be implemented. COPC will take all reasonable steps to avoid or minimize such delays. The notice required by this Section will be effective upon the mailing of the same by overnight mail or by certified mail, return receipt requested, to the Applicable EPA Regional Office as specified in Paragraph 433 (Notice).

383. Failure by COPC to substantially comply with the notice requirements of Paragraph 382 as specified above will render this Section XIV (Force Majeure) voidable by the United States, in consultation with the Applicable Co-Plaintiff, as to the specific event for which COPC has failed to comply with such notice requirement, and, if voided, is of no effect as to the particular event involved.

384. The United States, after consultation with the Applicable Co-Plaintiff, will notify COPC in writing regarding its claim of a delay or impediment to performance within forty-five (45) days of receipt of the force majeure notice provided under Paragraph 382.

385. If the United States, after consultation with the Applicable Co-Plaintiff, agrees that the delay or impediment to performance has been or will be caused by circumstances beyond the control of COPC including any entity controlled by COPC and that COPC could not have prevented the delay by the exercise of due diligence, the appropriate Parties will stipulate in writing to an extension of the required deadline(s) for all requirement(s) affected by the delay by a period equivalent to the delay actually caused by such circumstances. Such stipulation will be treated as a non-material modification to the Consent Decree pursuant to Paragraph 437 (Modification) of this Consent Decree. COPC will not be liable for stipulated penalties for the period of any such delay.

386. If the United States, after consultation with the Applicable Co-Plaintiff, does not accept COPC's claim of a delay or impediment to performance, COPC must submit the matter to the Court for resolution to avoid payment of stipulated penalties, by filing a petition for determination with the Court by no later than forty-five (45) days after receipt of the notice in Paragraph 384. Once COPC has submitted this matter to the Court, the United States and the Applicable Co-Plaintiff will have forty-five (45) business days to file their responses to the petition. If the Court determines that the delay or impediment to performance has been or will be caused by circumstances beyond the control of COPC including any entity controlled by COPC and that the delay could not have been prevented by COPC by the exercise of due diligence, COPC will be excused as to that event(s) and delay (including stipulated penalties), for a period of time equivalent to the delay caused by such circumstances.

387. COPC will bear the burden of proving that any delay of any requirement(s) of this Consent Decree was caused by or will be caused by circumstances beyond its/their control, including any entity controlled by it, and that it could not have prevented the delay by the

exercise of due diligence. COPC will also bear the burden of proving the duration and extent of any delay(s) attributable to such circumstances. An extension of one compliance date based on a particular event may, but will not necessarily, result in an extension of a subsequent compliance date or dates.

388. Unanticipated or increased costs or expenses associated with the performance of COPC's obligations under this Consent Decree will not constitute circumstances beyond its control, or serve as the basis for an extension of time under this Section XIV.

389. Notwithstanding any other provision of this Consent Decree, the Parties do not intend that COPC's serving of a force majeure notice or the Parties' inability to reach agreement will cause this Court to draw any inferences nor establish any presumptions adverse to any Party.

390. As part of the resolution of any matter submitted to this Court under this Section XIV, the appropriate Parties by agreement, or the Court, by order, may in appropriate circumstances extend or modify the schedule for completion of work under the Consent Decree to account for the delay in the work that occurred as a result of any delay or impediment to performance agreed to by the United States or approved by this Court. COPC will be liable for stipulated penalties for their failure thereafter to complete the work in accordance with the extended or modified schedule.

XV. RETENTION OF JURISDICTION/DISPUTE RESOLUTION

391. This Court will retain jurisdiction of this matter for the purposes of implementing and enforcing the terms and conditions of the Consent Decree and for the purpose of adjudicating all disputes of the Consent Decree between the United States and the Co-Plaintiffs and COPC that may arise under the provisions of the Consent Decree, until the Consent Decree terminates in accordance with Section XVIII of this Consent Decree (Termination).

392. The dispute resolution procedure set forth in this Section XV will be available to resolve any and all disputes arising under this Consent Decree, including assertion of commercial unavailability under Paragraph 266 of this Consent Decree, provided that the Party making such application has made a good faith attempt to resolve the matter with the other Party.

393. The dispute resolution procedure required herein will be invoked upon the giving of written notice by one of the Parties to this Consent Decree to another advising the other appropriate Party(ies) of a dispute pursuant to this Section XV. The notice will describe the nature of the dispute, and will state the noticing Party's position with regard to such dispute. The Party or Parties receiving such notice will acknowledge receipt of the notice and the Parties will expeditiously schedule a meeting to discuss the dispute informally.

394. Disputes submitted to dispute resolution will, in the first instance, be the subject of informal negotiations between the Parties. Such period of informal negotiations will not extend beyond ninety (90) calendar days from the date of the first meeting between representatives of the Parties, unless the Parties agree in writing that this period should be extended. Failure by the parties to extend the informal negotiation period in writing will not terminate the informal negotiation period provided that the parties are continuing to negotiate in good faith.

395. (a) Informal negotiations will cease upon either: (i) COPC's submission of a request to the United States and the Applicable Co-Plaintiff of a written summary of its/their position regarding the dispute; or (ii) the United States' and/or the Applicable Co-Plaintiff's submission to COPC of a written summary of its/their position.

(b) Under the circumstances of Subparagraph 395(a)(i), if the United States and/or the Applicable Co-Plaintiff respond to COPC's request within sixty (60) days of receipt, then the

position advanced by the United States and/or the Applicable Co-Plaintiff, as applicable, will be considered binding unless, within sixty (60) calendar days of COPC's receipt of the written summary, COPC files with the Court a petition which describes the nature of the dispute. The United States or the Applicable Co-Plaintiff will respond to the petition within sixty (60) days of filing. In resolving a dispute between the parties under these circumstances, the position of the United States and the Applicable Co-Plaintiff will be upheld if supported by substantial evidence in the administrative record, which may be supplemented for good cause shown.

(c) Under the circumstances of Subparagraph 395(a)(i), if the United States and/or the Applicable Co-Plaintiff do not respond to COPC's request for a written summary within sixty (60) days of receipt, then COPC will file with the Court a petition which describes the nature of the dispute within one-hundred five (105) days after submitting the initial request to the United States and the Applicable Co-Plaintiff. Applicable principles of law will govern the resolution of the dispute.

(d) Under the circumstances of Subparagraph 395(a)(ii), the position advanced by the United States and/or the Applicable Co-Plaintiff, as applicable, will be considered binding unless, within sixty (60) calendar days of COPC's receipt of the written summary, COPC files with the Court a petition which describes the nature of the dispute. The United States or the Applicable Co-Plaintiff will respond to the petition within sixty (60) days of filing. In resolving a dispute between the parties under these circumstances, the position of the United States and the Applicable Co-Plaintiff will be upheld if supported by substantial evidence in the administrative record, which may be supplemented for good cause shown.

396. In the event that the United States and the Applicable Co-Plaintiff make differing determinations or take differing actions that affect COPC's rights or obligations under this Consent Decree, the final decisions of the United States will take precedence.

397. Where the nature of the dispute is such that a more timely resolution of the issue is required, the time periods set forth in this Section XV may be shortened upon motion of one of the Parties to the dispute.

398. The Parties do not intend that the invocation of this Section XV by a Party cause the Court to draw any inferences nor establish any presumptions adverse to either Party as a result of invocation of this Section.

399. As part of the resolution of any dispute submitted to dispute resolution, the Parties, by agreement, or this Court, by order, may, in appropriate circumstances, extend or modify the schedule for completion of work under this Consent Decree to account for the delay in the work that occurred as a result of dispute resolution. COPC will be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule.

XVI. EFFECT OF SETTLEMENT

400. Definitions. For purposes of Section XVI (Effect of Settlement), the following definitions apply:

(a) "Applicable NSR/PSD Requirements" will mean: PSD requirements at Part C of Subchapter I of the Act, 42 U.S.C. § 7475, and the regulations promulgated thereunder at 40 C.F.R. §§ 52.21 and 51.166; the portions of the applicable SIPs and related rules adopted as required by 40 C.F.R. §§ 51.165 and 51.166; "Plan Requirements for Non-Attainment Areas" at Part D of Subchapter I of the Act, 42 U.S.C. §§ 7502-7503, and the regulations promulgated thereunder at 40 C.F.R. §§ 51.165 (a) and (b), 40 C.F.R. Part 51, Appendix S, and 40 C.F.R. § 52.24, and any Title V regulations that implement, adopt or incorporate the specific regulatory requirements identified above; any applicable, federally-enforceable

state or local regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified above; any Title V permit provisions that implement, adopt or incorporate the specific regulatory requirements identified above; any applicable state or local regulations enforceable by Co-Plaintiffs that implement, adopt, or incorporate the specific federal regulatory requirements identified above.

(b) "Applicable NSPS Subparts A and J Requirements" will mean the standards, monitoring, testing, reporting and recordkeeping requirements, found at 40 C.F.R. §§ 60.100 through 60.109 (Subpart J), relating to a particular pollutant and a particular affected facility, and the corollary general requirements found at 40 C.F.R. §§ 60.1 through 60.19 (Subpart A) that are applicable to any affected facility covered by Subpart J; and any applicable, federally-enforceable state or local regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified above.

(c) "Post-Lodging Compliance Dates" will mean any dates in this Section XVI (Effect of Settlement) after the Date of Lodging. Post-Lodging Compliance Dates include dates certain (e.g., "December 31, 2006"), dates after Lodging represented in terms of "months after Lodging" (e.g., "Twelve Months after the Date of Lodging"), and dates after Lodging represented by actions taken (e.g., "Date of Certification"). The Post-Lodging Compliance Dates represent the dates by which work is required to be completed or an emission limit is required to be met under the applicable provisions of this Consent Decree.

401. Resolution of Liability Regarding the Applicable NSR/PSD Requirements. With respect to emissions of the following pollutants from the following units, entry of this Consent Decree will resolve all civil liability of COPC to the United States and the Co-Plaintiffs for violations of the Applicable NSR/PSD Requirements resulting from pre-Lodging construction or modification up to the following dates.

Refinery/Unit	Pollutant	Date	Date for NO_x if COPC takes hard limits under ¶¶ 27, 38, or 48	Date if COPC acts under the ¶ No. in the parenthesis
Alliance FCCU	NO_x	3/31/15	12/31/14 (¶ 27)	6/30/10(¶ 59)
	SO_2	12/31/09		12/31/09(¶ 59)
	PM	12/31/09		12/31/09(¶ 59)
	CO	9/30/05		

Bayway FCCU	NO_x	5/31/09	no change	
	SO_2	DOL		
	PM	DOL		
	CO	DOL		
Borger 29 FCCU	NO_x	5/31/09	5/31/12 (¶ 48)	5/31/12 (¶ 39)
	SO_2	12/31/06		12/31/07 (¶ 58)
Borger 40 FCCU	NO_x	5/31/15	5/31/12 (¶ 48)	5/31/12 (¶ 39)
	SO_2	12/31/15		12/31/07 (¶ 58)
Ferndale FCCU	NO_x	5/31/13 (But see ¶ 402)	no change	
	SO_2	DOL		
	PM	12/31/06		
	CO	DOL		
LAR Wilmington FCCU	NO_x	3/1/11	no change	
	SO_2	3/1/11		
	PM	12/31/08		
Sweeny 3 FCCU	NO_x	3/1/12	no change	
	SO_2	3/1/12		
Sweeny 27 FCCU	NO_x	6/30/10	N/A	
	SO_2	5/31/10		
Trainer FCCU	NO_x	5/31/09	no change	
	SO_2	12/31/06		
	PM	12/31/06		
Wood River 1 FCCU	NO_x	3/31/13	12/31/12 (¶ 27)	
	SO_2	12/31/08		
	PM	12/31/08		
Wood River 2 FCCU	NO_x	5/31/15	no change	
	SO_2	12/31/12		
	PM	12/31/12		
Combustion Units on which Qualifying Controls are installed and which are used to satisfy the requirements of ¶ 95	NO_x	Later of DOL or date of installation of Qualifying Controls		

Bayway Crude Pipestill Heater	NO_x	6/30/11
All other heaters and boilers at the Covered Refineries	NO_x	DOL
All heaters and boilers at the Borger, Ferndale, Rodeo, and Santa Maria Refineries and Distilling West	SO_2	DOL
All heaters and boilers at the Alliance Refinery except heater 191-H-1	SO_2	DOL
Alliance Heater 191-H-1	SO_2	12/31/06
All heaters and boilers at LAR Carson and LAR Wilmington Plants	SO_2	Date of EPA AMP approval
All heaters and boilers at Sweeny, Trainer, and Wood River (excluding Distilling West)	SO_2	Earlier of 6/30/08 or the date of COPC acceptance of NSPS
All Bayway heaters and boilers except those in ¶ 114(b)	SO_2	DOL
Bayway heaters and boilers listed in ¶ 114(b)	SO_2	6/30/11

402. Resolution of Liability Regarding NOx Emissions at the Ferndale Refinery. Notwithstanding the provisions of Paragraph 401, COPC is required to comply with the NO_x emission limits and other requirements relating to NO_x emissions found in Washington Department of Ecology Permit PSD-00-02, its amendments, and COPC's Title V permit that incorporates these NO_x limits and requirements. Except with respect to the PM and PM-10 limits

found in NWCAA Order of Approval to Construct #733a, to the extent that COPC is subject to emissions limitations found in pre-Lodging permits issued under PSD or Non-Attainment New Source Review programs, nothing in this Consent Decree shall be construed to relieve COPC from its obligations to comply with those permits.

403. Resolution of Liability for PM Emissions Under the Applicable NSR/PSD Requirements. With respect to emissions of PM from Borger FCCUs 29 and 40 and Sweeny FCCUs 3 and 27, if and when COPC accepts an emission limit of 0.5 pound PM per 1000 pounds of coke burned on a 3-hour average basis and demonstrates compliance by conducting a 3-hour performance test representative of normal operating conditions for PM emissions at one or more of these FCCUs, then all civil liability of COPC to the United States and the Co-Plaintiffs will be resolved for violations of the Applicable NSR/PSD Requirements relating to PM emissions at that particular FCCU resulting from pre-Lodging construction or modification of that FCCU.

404. Resolution of Liability for CO Emissions Under the Applicable NSR/PSD Requirements. With respect to emissions of CO from Borger FCCUs 29 and 40, the LAR Wilmington FCCU, Sweeny FCCUs 3 and 27, the Trainer FCCU, and Wood River FCCUs 1 and 2, if and when COPC accepts an emission limit of 100 ppmvd of CO at 0% O_2 on a 365-day rolling average basis and demonstrates compliance using CEMS at one or more of these FCCUs, then all civil liability of COPC to the United States and the Co-Plaintiffs will be resolved for violations of the Applicable NSR/PSD Requirements relating to CO emissions at that particular FCCU resulting from pre-Lodging construction or modification of that FCCU.

405. Resolution of Liability regarding the Distilling West FCCU. This Consent Decree resolves all civil liability of COPC to the United States and the State of Illinois under the

Prevention of Significant Deterioration requirements of Part C of the Clean Air Act and the implementing regulations at 40 C.F.R. § 52.21, and the Illinois regulations which incorporate those rules, for any increase in PM and SO_2 resulting from the construction, modification and operation of the Distilling West FCCU occurring prior to July 31, 2003. During the life of this Decree, any major modification to the Distilling West FCCU, as defined in 40 C.F.R. § 52.21, occurring after July 31, 2003, is beyond the scope of this release.

406. Reservation of Rights Regarding Applicable NSR/PSD Requirements: Release for Violations Continuing After the Date of Lodging Can Be Rendered Void. Notwithstanding the resolution of liability in Paragraph 401, the releases of liability by the United States and the Co-Plaintiffs to COPC for pre-Lodging violations of the Applicable NSR/PSD Requirements continuing during the period between the Date of Lodging of the Consent Decree and the Post-Lodging Compliance Dates will be rendered void if COPC materially fails to comply with any of the obligations and requirements of Section V.A to V.D (relating to FCCUs), Section V.F (relating to NO_x reductions from Combustion Units), or Section V.G (relating to SO_2 reductions from heaters and boilers) of this Consent Decree; provided, however, that the releases in Paragraph 401 will not be rendered void if COPC timely remedies such material failure and pays any stipulated penalties due as a result of such material failure.

407. Exclusions from Release Coverage Regarding Applicable NSR/PSD Requirements: Construction and/or Modification Not Covered by Paragraph 401. Notwithstanding the resolution of liability in Paragraph 401, nothing in this Consent Decree precludes the United States and/or the Co-Plaintiffs from seeking from COPC injunctive relief, penalties, or other appropriate relief for violations by COPC of the Applicable NSR/PSD Requirements resulting from: (1) construction or modification that commenced prior to the Date

of Lodging of the Consent Decree, if the resulting violations relate to pollutants or units not covered by the Consent Decree; or (2) any construction or modification that commences after the Date of Lodging of the Consent Decree.

408. Evaluation of Applicable PSD/NSR Requirements Must Occur. Increases in emissions from units covered by this Consent Decree, where the increases result from the Post-Lodging construction or modification of any units within the Covered Refineries, are beyond the scope of the release in Paragraph 401, and COPC is not relieved of any obligation to evaluate any such increases in accordance with the Applicable PSD/NSR Requirements.

409. Resolution of Liability Regarding Applicable NSPS Subparts A and J Requirements. With respect to emissions of the following pollutants from the following units, entry of this Consent Decree will resolve all civil liability of COPC to the United States and the Co-Plaintiffs for violations of the Applicable NSPS Subparts A and J Requirements from the date that the Pre-Lodging claims of the United States and the Co-Plaintiffs accrued up to the following dates:

(a) FCCUs

FCCU	SO_2	PM	CO
Alliance	12/31/09	DOL	9/30/05
Bayway	DOL	DOL	DOL
Borger 29	12/31/06 (or 12/31/07 if COPC uses ¶ 58)	12/31/06	DOL
Borger 40	12/31/15 (or 12/31/07 if COPC uses ¶ 58)	4/11/05	DOL
Ferndale	DOL	DOL	DOL

LAR Wilmington	6/1/05	4/11/05	4/11/05
Sweeny 3	6/30/06	4/11/06	4/11/05
Sweeny 27	6/30/06	4/11/06	DOL
Trainer	12/31/06	12/31/06	12/31/06
Wood River 1	12/31/08	DOL	4/11/05
Wood River 2	12/31/12	DOL	4/11/05

(b) Sulfur Recovery Plants

SRP	SO_2
Alliance	DOL
Bayway	4/11/05
Borger	DOL
Ferndale	DOL
LAR Carson	DOL
LAR Wilmington	4/11/05
Rodeo	4/11/05
Santa Maria	4/11/05
Sweeny	DOL
Trainer	4/11/05
Wood River	DOL

(c) Heaters and Boilers

Heater and Boiler	SO_2
All heaters and boilers at the Borger, Ferndale, Rodeo, and Santa Maria Refineries and at Distilling West	DOL
All heaters and boilers at the Alliance Refinery except heater 191-H-1	DOL
Alliance Heater 191-H-1	12/31/06
All heaters and boilers at LAR Carson and LAR Wilmington Plants	Date of EPA AMP approval
All heaters and boilers at Sweeny, Trainer, and Wood River	Earlier of 6/30/08 or the date of COPC acceptance of NSPS
All Bayway heaters and boilers except those in ¶ 114(b)	DOL
Bayway heaters and boilers listed in ¶ 114(b)	6/30/11

(d) Flaring Devices

Flaring Device	SO_2
All listed in Appendix A	Date on which COPC certifies compliance with a compliance method for the Flaring Device pursuant to Paragraphs 142 and 143

410. Reservation of Rights Regarding Applicable NSPS Subparts A and J

Requirements: Release for NSPS Violations Can Be Rendered Void. Notwithstanding the resolution of liability in Paragraph 409, the release of liability by the United States and the Co-Plaintiffs to COPC set forth in Paragraph 409 will be rendered void if COPC materially fails

to comply with the obligations and requirements of Sections V.G through V.I of this Consent Decree; provided, however, that the release in Paragraph 409 will not be rendered void if COPC timely remedies such material failure and pays any stipulated penalties due as a result of such material failure.

411. Prior NSPS Applicability Determinations. Nothing in this Consent Decree will affect the status of any FCCU, heater or boiler, fuel gas combustion device, or sulfur recovery plant currently subject to NSPS as previously determined by any federal, state, regional, or local authority or any applicable permit.

412. Resolution of Liability Regarding Benzene Waste Operations NESHAP Requirements. Entry of this Consent Decree will resolve all civil liability of COPC to the United States and the Co-Plaintiffs for violations of the statutory and regulatory requirements set forth below in subparagraphs (a) through (c) (the "BWON Requirements") that (1) commenced and ceased prior to the Date of Entry of the Consent Decree; and (2) commenced prior to the Date of Entry of the Consent Decree and/or continued past the Date of Entry, provided that the events giving rise to such post-Entry violations are identified by COPC in its BWON Compliance Review and Verification Report(s) submitted pursuant to Paragraph 176 and corrected by COPC as required under Paragraphs 179 - 180:

(a) Benzene Waste Operations NESHAP. The National Emission Standard for Benzene Waste Operations, 40 C.F.R. Part 61, Subpart FF, promulgated pursuant to Section 112(e) of the Act, 42 U.S.C. § 7412(e), including any federal regulation that adopts or incorporates the requirements of Subpart FF by express reference, but only to the extent of such adoption or incorporation; and

(b) Any applicable, federally-enforceable state or local regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified in Paragraph 412(a).

(c) Any applicable state or local regulations enforceable by the Co-Plaintiffs that implement, adopt, or incorporate the specific federal regulatory requirements identified in Paragraph 412(a).

413. Resolution of Liability Regarding LDAR Requirements. Entry of this Consent Decree will resolve all civil liability of COPC to the United States and the Co-Plaintiffs for violations of the statutory and regulatory requirements set forth below in Subparagraphs 413(a) through 413(c) that (1) commenced and ceased prior to the Date of Entry of the Consent Decree; and (2) commenced prior to the Date of Entry of the Consent Decree and continued past the Date of Entry, provided that the events giving rise to such post-Entry violations are identified by COPC in its Initial Third-Party Audit Report(s) submitted pursuant to Paragraph 229 and corrected by COPC as required under Paragraph 232:

(a) LDAR Requirements. For all equipment in light liquid service and gas and/or vapor service, the LDAR requirements of Co-Plaintiffs under state implementation plans adopted pursuant to the Clean Air Act or promulgated by EPA pursuant to Sections 111 and 112 of the Clean Air Act, and codified at 40 C.F.R. Part 60, Subparts VV and GGG; 40 C.F.R. Part 61, Subparts J and V; and 40 C.F.R. Part 63, Subparts F, H, and CC;

(b) Any applicable, federally-enforceable state or local regulations or permits that implement, adopt, or incorporate the specific regulatory requirements identified in Paragraph 413(a).

(c) Any applicable state or local regulations or permits enforceable by the Co-Plaintiffs that implement, adopt, or incorporate the specific regulatory requirements identified in Paragraph 413(a).

414. Reservation of Rights Regarding Benzene Waste Operations NESHAP and LDAR Requirements. Notwithstanding the resolution of liability in Paragraphs 412 - 413, nothing in this Consent Decree precludes the United States and/or the Co-Plaintiffs from seeking from COPC injunctive and/or other equitable relief or civil penalties for violations by COPC of Benzene Waste Operations NESHAP and/or LDAR requirements that (1) commenced prior to

the Date of Entry of this Consent Decree and continued after the Date of Entry if COPC fails to identify and address such violations as required by Paragraphs 176 and Paragraphs 179 - 180 and Paragraphs 229 and 232 of this Consent Decree; or (2) commenced after the Date of Entry of the Consent Decree.

415. Entry of the Consent Decree will resolve all liability of COPC to the United States and the Applicable Co-Plaintiff for civil penalties for violations of VOC permit limits for fugitive emissions at a Covered Refinery (where such permit limits exist) resulting from the identification of new LDAR components at the Covered Refinery, provided that COPC: (i) identifies the new LDAR components in the initial third-party LDAR audit required under Paragraph 229 at that Covered Refinery; (ii) incorporates the new LDAR components into its enhanced LDAR program under Subsection V.O of this Decree; and (iii) timely seeks to incorporate the estimated VOC emissions from the new LDAR components in permits applications COPC submits under Paragraph 257. This resolution of liability will extend up to the date that COPC is required to submit a permit application under Paragraph 257. The United States and the Applicable Co-Plaintiff expressly reserve its/their right to assert violations of the Applicable NSR/PSD Requirements with respect to VOC emissions at the Covered Refinery and to consider the implications of revised VOC emission estimates on past compliance with the Applicable NSR/PSD Requirements.

416. Entry of the Consent Decree will resolve all liability of COPC to the United States and the Applicable Co-Plaintiff for civil penalties for violations of SO_2 permit limits for Flaring Device(s) at a Covered Refinery (where such permit limits exist) resulting from COPC's discovery of previously-unidentified or unknown SO_2 emissions from the Flaring Device(s) in question, provided that COPC (i) discovers such increased SO_2 emissions in the course of the

development of an NSPS Compliance Plan for Flaring Devices under Paragraph 141; and (ii) complies with the requirements of Subsections V.J, V.L, and V.M. This resolution of liability will extend up to the date of the completion of the implementation of the NSPS Compliance Plan for Flaring Devices as relates to the particular Flaring Device(s) at issue. The United States and the Applicable Co-Plaintiff expressly reserve its/their right to assert violations of the Applicable NSR/PSD Requirements with respect to SO_2 emissions from Flaring Devices at the Covered Refinery and to consider the implications of revised SO_2 emission estimates on past compliance with the Applicable NSR/PSD Requirements.

417. Resolution of Liability under Sections 304 and 313 of EPCRA and Section 103(a) of CERCLA for Certain Acid Gas Flaring Incidents. Entry of this Consent Decree will resolve all civil liability of COPC to the United States and the Co-Plaintiffs for violations of Sections 304 and 313 of the Emergency Planning and Community Right-to-Know Act ("EPCRA"), 42 U.S.C. § 11004, and Section 103(a) of Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9603(a), relating to Acid Gas Flaring Incidents that occurred between January 1, 1999, and September 30, 2004, provided that COPC has identified such incidents and potential violations in a report submitted to EPA dated September 30, 2004, and now maintained in EPA's files.

418. Other. Entry of this Consent Decree will resolve all civil liability of COPC to the United States and the Co-Plaintiffs for the following:

(a) Violations up to the Date of Lodging of NSPS Subparts A and H at the LAR Wilmington Sulfuric Acid Plant;

(b) Violations alleged in EPA NOV File No. AED/MSEB - 7024 (6/25/04) and EPA NOV. File No. AED/MSEB - 7015 (11/12/03);

(c) The following violations on or before June 30, 2007, in the Order of Approval to Construct #733a ("Order of Approval") issued by the NWCAA relating to the Ferndale FCCU: (i) the PM and PM-10 limits in Condition D-4; (ii) the requirement to assess compliance with those limits in Condition D-4; (iii) the requirement to establish and operate within specific operating parameters in Condition D-4; (iv) the requirement to establish, monitor and operate within specific operating parameters in Condition D-1(b) for SO_2 emissions; and (v) the reporting requirements of Condition E-10(f).

(d) Violations on or before December 31, 2005, of 40 C.F.R. Part 61, Subpart FF, arising from COPC's failure to demonstrate that the roughing filter at the Ferndale Refinery is equivalent in performance capability to an enhanced biodegradation unit under 40 C.F.R. § 61.348(b)(2)(ii)(B);

(e) Violations of 40 C.F.R. Part 61, Subpart FF, 40 C.F.R. Part 63, Subpart H, and Special Condition 41E of Permit 9868A (requirement to equip each open-ended valve or line in Unit 11 with a cap, blind flange, plug, or second valve), arising from information disclosed by COPC to EPA during EPA's September 29 - October 3, 1997 inspection and related investigation of the Borger Refinery, including the specific violations that are the subject of a litigation referral from EPA to the Department of Justice;

(f) Violations of 40 C.F.R. Part 61, Subpart FF; 40 C.F.R. Part 60, Subparts VV and GGG; 40 C.F.R. Part 61, Subparts J and V; and 40 C.F.R. Part 63, Subparts F, H, and CC arising from information disclosed by COPC to EPA during EPA's July 12-16, 1999, August 17, 1999, and October 1, 1999 inspection and related investigation of the Sweeny Refinery;

(g) Violations of 40 C.F.R. Part 60, Subparts VV and GGG; 40 C.F.R. Part 61, Subparts J and V; and 40 C.F.R. Part 63, Subparts F, H, and CC, and associated LDEQ regulations regarding LDAR arising from information disclosed by COPC during LDEQ inspections of the Alliance Refinery on the following dates:

1997	1998	2000	2001	2002	2003
11/4 11/13 12/2 - 12/3 12/17 - 12/18	1/5	5/31	5/17 - 5/22	3/22	8/26 - 9/9

(h) Violations of 40 C.F.R. Part 60, Subparts VV and GGG; 40 C.F.R. Part 61, Subparts J and V; and 40 C.F.R. Part 63, Subparts F, H, and CC, and associated LDEQ regulations regarding LDAR arising from information disclosed by COPC during a joint EPA-LDEQ inspection of the Alliance Refinery on March 29, 1999 through April 1, 1999, and April 19, 1999, through April 22, 1999;

(i) Violations set forth in Appendix H of this Consent Decree;

(j) Violations of Section 103(a) of CERCLA, as amended, 42 U.S.C. § 9603(a), and Sections 304(b) and (c) of EPCRA, 42 U.S.C. § 11004(b) and (c), alleged in the Administrative Complaint issued to COPC on August 25, 2004 (U.S. Docket No. CERCLA-03-2004-0356 and U.S. Docket No. EPCRA-03-2004-0356), to have arisen from a release on July 30, 2002, from the Trainer Refinery.

419. The resolutions of liability and reservations of rights set forth in this Section XVI extend only to COPC and do not extend to any other person; provided, however, that these resolutions and reservations also apply to COPC's officers, directors, and employees, but only to the extent that the alleged liability of such person is based on that person's status as an officer,

director, or employee of COPC, and not to the extent that the alleged liability arose independently of the alleged liability of COPC.

420. Audit Policy. Nothing in this Consent Decree is intended to limit or disqualify COPC, on the grounds that information was not discovered and supplied voluntarily, from seeking to apply EPA's Audit Policy or any state or local audit policy to any violations or non-compliance that COPC discovers during the course of any investigation, audit, or enhanced monitoring that COPC is required to undertake pursuant to this Consent Decree.

421. Claim/Issue Preclusion. In any subsequent administrative or judicial proceeding initiated by the United States or the Co-Plaintiffs for injunctive relief, penalties, or other appropriate relief relating to COPC for violations of the PSD/NSR, NSPS, NESHAP, and/or LDAR requirements, not identified in Section XVI (Effect of Settlement) of the Consent Decree and/or the Complaint:

(a) COPC will not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, or claim-splitting. Nor may COPC assert, or maintain, any other defenses based upon any contention that the claims raised by the United States or the Co-Plaintiffs in the subsequent proceeding were or should have been brought in the instant case. Nothing in the preceding sentences is intended to affect the ability of COPC to assert that the claims are deemed resolved by virtue of Section XVI of the Consent Decree.

(b) Except as set forth in Subparagraph (a), above, the United States and the Co-Plaintiffs may not assert or maintain that this Consent Decree constitutes a waiver or determination of, or otherwise obviates, any claim or defense whatsoever, or that this Consent Decree constitutes acceptance by COPC of any interpretation or guidance issued by EPA related to the matters addressed in this Consent Decree.

422. Other Reservations. Nothing in this Consent Decree will be construed to limit the authority of the United States and the Co-Plaintiffs to undertake any action against any person, including COPC, to abate or correct conditions which may present an imminent and substantial

endangerment to the public health, welfare, or the environment. Nothing in this Consent Decree will limit the authority of any Co-Plaintiff to take any action under a state statute or common law necessary to protect public health, safety, welfare and the environment. Nothing in the Consent Decree affects any aspect of an employer/employee relationship as to health and safety hazards. Nothing in this Consent Decree is intended to affect the case of New Jersey Department of Environmental Protection and Administrator, New Jersey Spill Compensation Fund v. Exxon Mobil Corporation, Docket No. UNNL 3026 04 (Law Div. Union County), and no party to this Consent Decree makes any representations about that action. Nothing in this Consent Decree is intended to affect the ability of New Jersey or the United States to collect natural resource damages as a result of operations at the Bayway Refinery.

XVII. GENERAL PROVISIONS

423. Other Laws. Except as specifically provided by this Consent Decree, nothing in this Consent Decree will relieve COPC of its obligations to comply with all applicable federal, state, regional and local laws and regulations, including but not limited to more stringent standards. In addition, nothing in this Consent Decree will be construed to prohibit or prevent the United States or Co-Plaintiffs from developing, implementing, and enforcing more stringent standards subsequent to the Date of Lodging of this Consent Decree through rulemaking, the permit process, or as otherwise authorized or required under federal, state, regional, or local laws and regulations. Subject to Section XVI (Effect of Settlement), Paragraph 379, and Paragraph 425 of this Consent Decree, nothing contained in this Consent Decree will be construed to prevent or limit the rights of the United States or the Co-Plaintiffs to seek or obtain other remedies or sanctions available under other federal, state, regional or local statutes or regulations, by virtue of COPC's violation of the Consent Decree or of the statutes and

regulations upon which the Consent Decree is based, or for COPC's violations of any applicable provision of law. This will include the right of the United States or the Co-Plaintiffs to invoke the authority of the Court to order COPC's compliance with this Consent Decree in a subsequent contempt action. The requirements of this Consent Decree do not exempt COPC from complying with any and all new or modified federal, state, regional and/or local statutory or regulatory requirements that may require technology, equipment, monitoring, or other upgrades after the Date of Lodging of this Consent Decree.

424. Startup, Shutdown, Malfunction. Notwithstanding the provisions of this Consent Decree regarding startup, shutdown, and Malfunction, this Consent Decree does not exempt COPC from the requirements of state laws and regulations or from the requirements of any permits or plan approvals issued to COPC, as these laws, regulations, permits, and/or plan approvals may apply to startups, shutdowns, and Malfunctions at the Covered Refineries.

425. Permit Violations. Nothing in this Consent Decree will be construed to prevent or limit the right of the United States or the Co-Plaintiffs to seek injunctive or monetary relief for violations of permits; provided, however, that with respect to monetary relief, the United States and the Co-Plaintiffs must elect between filing a new action for such monetary relief or seeking stipulated penalties under this Consent Decree, if stipulated penalties also are available for the alleged violation(s).

426. Failure of Compliance. The United States and the Co-Plaintiffs do not, by their consent to the entry of Consent Decree, warrant or aver in any manner that COPC's complete compliance with the Consent Decree will result in compliance with the provisions of the CAA or the corollary state and local statutes. Notwithstanding the review or approval by EPA or the Co-Plaintiffs of any plans, reports, policies or procedures formulated pursuant to the Consent

Decree, COPC will remain solely responsible for compliance with the terms of the Consent Decree, all applicable permits, and all applicable federal, state, regional, and local laws and regulations, except as provided in Section XIV (Force Majeure) and Paragraphs 264, 265, and 266.

427. Alternative Monitoring Plans. Except as otherwise specifically provided in Paragraph 124, wherever this Consent Decree requires or permits COPC to submit an AMP to EPA for approval, COPC will submit a complete AMP application. If an AMP is not approved, then within ninety (90) days of COPC's receipt of disapproval, COPC will submit to EPA for approval, with a copy to the Applicable Co-Plaintiff, a plan and schedule that provide for compliance with the applicable monitoring requirements as soon as practicable. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring.

428. Service of Process. COPC hereby agrees to accept service of process by mail with respect to all matters arising under or relating to the Consent Decree and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court, including but not limited to, service of a summons. The persons identified by COPC at Paragraph 433 (Notice) are authorized to accept service of process with respect to all matters arising under or relating to the Consent Decree.

429. Post-Lodging/Pre-Entry Obligations. Obligations of COPC under this Consent Decree to perform duties scheduled to occur after the Date of Lodging of the Consent Decree, but prior to the Date of Entry of the Consent Decree, will be legally enforceable only on and after the Date of Entry of the Consent Decree. Liability for stipulated penalties, if applicable, will accrue for violation of such obligations and payment of such stipulated penalties may be demanded by

the United States or the Co-Plaintiffs as provided in this Consent Decree, provided that the stipulated penalties that may have accrued between the Date of Lodging of the Consent Decree and the Date of Entry of the Consent Decree may not be collected unless and until this Consent Decree is entered by the Court.

430. Costs. Each Party to this action will bear its own costs and attorneys' fees.

431. Public Documents. All information and documents submitted by COPC to EPA and the Co-Plaintiffs pursuant to this Consent Decree will be subject to public inspection in accordance with the respective statutes and regulations that are applicable to EPA and the Co-Plaintiffs, unless subject to legal privileges or protection or identified and supported as trade secrets or business confidential in accordance with the respective state or federal statutes or regulations.

432. Public Notice and Comment. The Parties agree to the Consent Decree and agree that the Consent Decree may be entered upon compliance with the public notice procedures set forth at 28 C.F.R. § 50.7, and upon notice to this Court from the United States Department of Justice requesting entry of the Consent Decree. The United States and Co-Plaintiffs reserve the right to withdraw or withhold its consent to the Consent Decree if public comments disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. Additionally, the Parties agree and acknowledge that final approval by Co-Plaintiff, the State of Louisiana, Department of Environmental Quality, and entry of this Consent Decree is subject to the requirements of La. R.S. 30:2050.7, which provides for public notice of this Consent Decree in newspapers of general circulation and the official journals of the parishes in which COPC facilities are located, an opportunity for public comment, consideration of any comments, and concurrence by the State Attorney General.

433. Notice. Unless otherwise provided herein, notifications to or communications between the Parties will be deemed submitted on the date they are postmarked and sent by U.S. Mail, postage pre-paid, except for notices under Section XIV (Force Majeure) and Section XV (Retention Jurisdiction/Dispute Resolution) which will be sent either by overnight mail or by certified or registered mail, return receipt requested. Each report, study, notification or other communication of COPC will be submitted as specified in this Consent Decree, with copies to EPA Headquarters, the applicable EPA Region, and the Applicable Co-Plaintiff. If the date for submission of a report, study, notification or other communication falls on a Saturday, Sunday or legal holiday, the report, study, notification or other communication will be deemed timely if it is submitted the next business day. Except as otherwise provided herein, all reports, notifications, certifications, or other communications required or allowed under this Consent Decree to be submitted or delivered to the United States, EPA, the Co-Plaintiffs, and COPC will be addressed as follows:

As to the United States:

Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, DC 20044-7611
Reference Case No. 90-5-2-1-06722/1

As to EPA:

Director, Air Enforcement Division
Office of Regulatory Enforcement
U.S. Environmental Protection Agency
Mail Code 22452-A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460-0001

with a hard copy to
Director, Air Enforcement Division
Office of Regulatory Enforcement
c/o Matrix Environmental & Geotechnical Services
215 Ridgedale Avenue
Florham Park, NJ 07932

and an electronic copy to
neichlin@matrixengineering.com
Jackson.james@epa.gov
foley.patrick@epa.gov

EPA Regions:

Region 2:
Chief
Air Compliance Branch
US EPA Region 2
Ted Weiss Federal Building
290 Broadway, 21st Floor
New York, New York 10007-1866

Region 3:

Chief
Air Enforcement Branch (3AP12)
EPA Region III
1650 Arch Street
Philadelphia, PA, 19103

Region 5:

Air and Radiation Division
U.S. EPA, Region 5
77 West Jackson Blvd. (AE-17J)
Chicago, IL 60604
Attn: Compliance Tracker

and

Office of Regional Counsel
U.S. EPA, Region 5
77 West Jackson Blvd. (C-14J)
Chicago, IL 60604

Region 6:

Chief
Air, Toxics, and Inspections Coordination Branch
Environmental Protection Agency, Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

Region 9:
Director
Air Division
Mail Code AIR-1
USEPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

Region 10:

Director, Office of Compliance and Enforcement
U.S. Environmental Protection Agency, Region 10
Mail Code: OCE-164
1200 Sixth Avenue
Seattle, WA 98101

As to Co-Plaintiffs:

As to Co-Plaintiff the State of Illinois

Maureen Wozniak
Assistant Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

and

Manager
Compliance and Enforcement Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

As to Co-Plaintiff the State of Louisiana, through the Department of Environmental Quality:

Peggy M. Hatch
Administrator, Enforcement Division
Office of Environmental Compliance
Louisiana Department of Environmental Quality
P.O. Box 4312
Baton Rouge, Louisiana 70821-4312

As to Co-Plaintiff the State of New Jersey:

Administrator, Air Compliance & Enforcement
New Jersey Department of Environmental Protection
Post Office Box 422
401 East State Street
Trenton, New Jersey 08625-0422

and

Manager, Central Air Compliance & Enforcement Office
New Jersey Department of Environmental Protection
Horizon Center, P.O. Box 407
Robbinsville, New Jersey 08625-0407

and

Deputy Attorney General, Section Chief
Environmental Enforcement
Division of Law
P.O. Box 093
25 Market Street
Trenton, New Jersey 08625-0093

As to Co-Plaintiff the Commonwealth of Pennsylvania

Regional Manager, Air Quality
Pennsylvania Department of Environmental Protection
2 East Main St.
Norristown, PA 19401

As to Co-Plaintiff the Northwest Clean Air Agency

Director
Northwest Clean Air Agency
1600 South Second St.
Mount Vernon, WA 98273-5202

As to COPC:

Cully Farhar, Program Manager
ConocoPhillips Company
600 North Dairy Ashford
Room TA3134
Houston, TX 77079
Telephone: (281) 293-4152

Thomas J. Myers, HSE Manager, U.S. Refining
ConocoPhillips Company
600 North Dairy Ashford
Room TA3138
Houston, TX 77079
Telephone: (281) 293-4851

Managing Environmental Counsel
Legal Department
ConocoPhillips Company
600 North Dairy Ashford
Houston, TX 77079

With a copy to each Applicable Refinery as shown below:

As to Alliance:

Refinery Manager
ConocoPhillips Company
Alliance Refinery
P.O. Box 176
Belle Chasse, LA 70037

As to Bayway:

Refinery Manager
ConocoPhillips Company
Bayway Refinery
1400 Park Avenue
Linden, NJ 07036

As to Borger:

Refinery Manager
ConocoPhillips Company
Borger Refinery
P. O. Box 271
Borger TX 79008

As to Ferndale:

Refinery Manager
ConocoPhillips Company
Ferndale Refinery
PO Box 8
Ferndale, WA 98248

As to the Los Angeles Carson and/or Los Angeles Wilmington Refineries:

Refinery Manager
ConocoPhillips Company
Los Angeles Refinery (Carson and Wilmington)
1660 W. Anaheim St.
Wilmington, CA 90744

As to the Rodeo and Santa Maria Refineries:

Refinery Manager
ConocoPhillips Company
San Francisco Refinery
1380 San Pablo Ave.
Rodeo, CA 94572

As to the Santa Maria Refinery:

Plant Manager
ConocoPhillips Company
Santa Maria Refinery
2555 Willow Road
Arroyo Grande, CA 93420

As to the Sweeny Refinery:

Refinery Manager
ConocoPhillips Company
Sweeny Refinery
P.O. Box 866
Sweeny, TX 77480

As to the Trainer Refinery:

Refinery Manager
ConocoPhillips Company
Trainer Refinery
4101 Post Road
Trainer, PA 19061

As to the Wood River Refinery (including Distilling West)

Refinery Manager
ConocoPhillips Company
Wood River Refinery
P.O. Box 76
Roxana, IL 62084

Any party may change either the notice recipient or the address for providing notices to it by serving all other parties with a notice setting forth such new notice recipient or address. In addition, the nature and frequency of reports required by the Consent Decree may be modified by mutual consent of the Parties. The consent of the United States to such modification must be in the form of a written notification from EPA, but need not be filed with the Court to be effective.

434. Approvals. All EPA approvals will be made in writing. All Co-Plaintiff approvals will be sent from the offices identified in Paragraph 433.

435. Opportunity for Comment by Applicable Co-Plaintiff. For all provisions of Section V where EPA approval is required, the Applicable Co-Plaintiff is entitled to provide comments to EPA and to consult with EPA regarding the issue in question.

436. Paperwork Reduction Act. The information required to be maintained or submitted pursuant to this Consent Decree is not subject to the Paperwork Reduction Act of 1980, 44 U.S.C. §§ 3501 et seq.

437. Modification. This Consent Decree contains the entire agreement of the Parties and will not be modified by any prior oral or written agreement, representation or understanding. Prior drafts of the Consent Decree will not be used in any action involving the interpretation or enforcement of the Consent Decree. Non-material modifications to this Consent Decree will be effective when signed in writing by EPA and COPC. The United States will file non-material modifications with the Court on a periodic basis. For purposes of this Paragraph, non-material modifications include but are not limited to modifications to the frequency of reporting obligations and modifications to schedules that do not extend the date for compliance with emissions limitations following the installation of control equipment or the completion of a catalyst additive program, provided that such changes are agreed upon in writing between EPA and COPC. Material modifications to this Consent Decree will be in writing, signed by EPA, the Applicable Co-Plaintiff, and COPC, and will be effective upon approval by the Court.

438. Effect of Shutdown. Except as provided in Subsection V.F, the permanent shutdown of a unit and the surrender of all permits for that unit will be deemed to satisfy all requirements of this Consent Decree applicable to that unit on and after the later of: (i) the date of the shutdown of the unit; or (ii) the date of the surrender of all permits. The permanent shutdown of a Refinery and the surrender of all air permits for that Refinery will be deemed to

satisfy all requirements of this Consent Decree applicable to that Refinery on and after the later of: (i) the date of the shutdown of the Refinery; or (ii) the date of the surrender of all permits.

XVIII. TERMINATION

439. Certification of Completion: Applicable Subsections. Prior to moving for termination under Paragraphs 443 - 444, COPC may seek to certify, as to a particular Covered Refinery, completion of one or more of the following Sections/Subsections of the Consent Decree applicable to that Refinery:

(a) Subsection V.A - Fluid Catalytic Cracking Units (including operation of the unit for one year after completion in compliance with the emission limits established pursuant to the Consent Decree);

(b) Subsections V.B through V.E - Fluid Catalytic Cracking Units (including operation of the unit for one year after completion in compliance with the emission limits established pursuant to this Consent Decree);

(c) Subsections V.F and V.G – Combustion Units (including operation of the relevant units for one year after completion in compliance with the emission limit set pursuant to the Consent Decree);

(d) Section VIII – Supplemental Environmental Projects.

440. Certification of Completion: COPC Actions. If COPC concludes that any of the Subsections of the Consent Decree identified in Paragraph 439 have been completed for any one of the Covered Refineries, COPC may submit a written report to EPA and the Applicable Co-Plaintiff describing the activities undertaken and certifying that the applicable Subsection(s) have been completed in full satisfaction of the requirements of this Consent Decree, and that COPC is in substantial and material compliance with all of the other requirements of the Consent Decree. The report will contain the following statement, signed by a responsible corporate official of COPC:

To the best of my knowledge, after appropriate investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

441. Certification of Completion: EPA Actions. Upon receipt of COPC's certification, EPA, after opportunity for comment by the Applicable Co-Plaintiff, will notify COPC whether the requirements set forth in the applicable Subsection have been completed in accordance with this Consent Decree. The parties recognize that ongoing obligations under such Subsections remain and necessarily continue (*e.g.*, reporting, recordkeeping, training, auditing requirements), and that COPC's certification is that it is in current compliance with all such obligations.

(a) If EPA concludes that the requirements have not been fully complied with, EPA will notify COPC as to the activities that must be undertaken to complete the applicable Subsection of the Consent Decree. COPC will perform all activities described in the notice, subject to its right to invoke the dispute resolution procedures set forth in Section XV (Dispute Resolution).

(b) If EPA concludes that the requirements of the applicable Subsection have been completed in accordance with this Consent Decree, EPA will so certify in writing to COPC. This certification will constitute the certification of completion of the applicable Subsection for purposes of this Consent Decree.

442. Certification of Completion: No Impediment to Stipulated Penalty Demand. Nothing in Paragraphs 439 - 441 will preclude the United States or the Co-Plaintiffs from seeking stipulated penalties for a violation of any of the requirements of the Consent Decree regardless of whether a Certification of Completion has been issued under Paragraph 441(b) of the Consent Decree. In addition, nothing in Paragraph 441 will permit COPC to fail to implement any ongoing obligations under the Consent decree regardless of whether a Certification of Completion has been issued under Paragraph 441(b) of the Consent Decree.

443. Termination: Conditions Precedent. This Consent Decree will be subject to termination as to the requirements applicable to any one Covered Refinery or as to the entire Consent Decree upon motion by the applicable Parties or upon motion by COPC acting alone under the conditions identified in Paragraph 444. Prior to seeking termination as to the requirements applicable to any one Refinery or as to the entire Decree, COPC must have completed and satisfied all of the following requirements of this Consent Decree:

(a) installation of control technology systems as specified in this Consent Decree with respect to the Refinery in question or with respect to all Refineries (if COPC is moving for termination of the entire Decree);

(b) compliance with all provisions contained in this Consent Decree with respect to the Refinery in question or with respect to all Refineries (if COPC is moving for termination of the entire Decree), which compliance may be established for specific parts of the Consent Decree in accordance with Paragraphs 439 - 441;

(c) payment of all penalties and other monetary obligations due under the terms of the Consent Decree; COPC may not move for termination of the requirements applicable to any one Refinery or as to the entire Decree unless all penalties and/or other monetary obligations owed to the United States or the Co-Plaintiffs are fully paid as of the time of the Motion;

(d) completion of the Supplemental/Beneficial Environmental Projects in Section VIII that pertain to the Refinery for which termination is sought or, if COPC is moving for termination of the entire Decree, completion of all Section VIII projects;

(e) application for and receipt of permits incorporating the surviving emission limits and standards established under this Consent Decree as to the Refinery for which termination is sought or as to all Refineries (if COPC is moving for termination of the entire Decree); and

(f) operation for at least one year of each unit in compliance with the emission limits established herein as to the Refinery for which termination is sought or as to all Refineries (if COPC is moving for termination of the entire Decree), and certification of such compliance for each unit within the first progress report following the conclusion of the compliance period.

444. Termination: Procedure. At such time as COPC believes that it has satisfied the requirements for termination set forth in Paragraph 443 as to one or more Covered Refineries or as to the entire Decree, COPC will certify such compliance and completion, in accordance with the certification language of Paragraph 440, to the United States and the Co-Plaintiffs in writing. Unless, within one-hundred twenty (120) days of receipt of COPC's certification under this Paragraph 444, either the United States or any Co-Plaintiff objects in writing with specific reasons, the Court may upon motion by COPC order that this Consent Decree be terminated as to such Covered Refinery(ies). If either the United States or any Co-Plaintiff objects to the certification by COPC then the matter will be submitted to the Court for resolution under Section XV (Retention of Jurisdiction/Dispute Resolution) of this Consent Decree. In such case, COPC will bear the burden of proving that this Consent Decree should be terminated.

XIX. SIGNATORIES

445. Each of the undersigned representatives certify that they are fully authorized to enter into the Consent Decree on behalf of such Parties, and to execute and to bind such Parties to the Consent Decree.

Dated this 2nd day of December, 2005.

UNITED STATES DISTRICT JUDGE

Consent Decree in the matter of United States et al. v. ConocoPhillips Company, Southern District of Texas (2005).

FOR THE UNITED STATES OF AMERICA

1.25.05
Date

Tom E. Sansonetti
THOMAS L. SANSONETTI
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice
Washington, D.C. 20530

1/25/05
Date

Annette M. Lang
ANNETTE M. LANG
Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044-7611
Telephone: (202) 514-4213
Facsimile: (202) 616-6584

MICHAEL T. SHELBY
United States Attorney
Southern District of Texas

1/26/05
Date

KEVIN C. AIMAN
Assistant United States Attorney
Southern Distric of Texas
Texas Bar No. 00797884
Fed. Bar No. 30329
910 Travis St., Suite 1500
P.O. Box 61129
Houston, TX 77208
Telephone: (713) 567-9516
Facsimile: (713) 718-3407

Consent Decree in the matter of United States et al. v. ConocoPhillips Company, Southern District of Texas (2005).

FOR THE ENVIRONMENTAL PROTECTION AGENCY

Date

THOMAS V. SKINNER
Acting Assistant Administrator for the
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
1200 Pennsylvania Ave., Mail Code 2201A
Washington, DC 20460

Consent Decree in the matter of United States et al. v. ConocoPhillips Company, Southern District of Texas (2005).

FOR CO-PLAINTIFF
THE PEOPLE OF THE STATE OF ILLINOIS

LISA M. MADIGAN
Attorney General
State of Illinois

MATTHEW J. DUNN, Chief
Environmental Enforcement/Asbestos Litigation Division

1/21/05
Date

BY: _____

THOMAS DAVIS, Chief
Environmental Bureau
Assistant Attorney General
500 S. Second St.
Springfield, IL 62706
(217) 782-9031

Consent Decree in the matter of United States et al. v. ConocoPhillips Company, Southern District of Texas (2005).

PRELIMINARY APPROVAL BY CO-PLAINTIFF, THE STATE OF LOUISIANA, THROUGH THE DEPARTMENT OF ENVIRONMENTAL QUALITY:

Date

HAROLD LEGGETT, Ph.D.
Assistant Secretary
Office of Environmental Compliance
Louisiana Department of Environmental Quality

Date

TED R. BROCHES, II
Trial Attorney
(La. Bar Roll #20456)
Legal Affairs Division
Louisiana Department of Environmental Quality
P.O. Box 4302
Baton Rouge, Louisiana 70821-4302
(225) 219-3985

Consent Decree in the matter of United States et al. v. ConocoPhillips Company, Southern District of Texas (2005).

FOR CO-PLAINTIFF
STATE OF NEW JERSEY

PETER C. HARVEY
ATTORNEY GENERAL OF NEW JERSEY

Date

By: _____
SCOTT B. DUBIN
Deputy Attorney General
New Jersey Department of Law and Public Safety
Division of Law
RJ Hughes Justice Complex
25 Market Street
~~P.O. Box 093~~
Trenton, NJ 08625-0093
(609) 984-7141

BRADLEY M. CAMPBELL
COMMISSIONER
NEW JERSEY DEPARTMENT OF
ENVIRONMENTAL PROTECTION

Dec. 28, 2007
Date

By: _____
~~LISA~~ P. JACKSON
Assistant Commissioner
Compliance and Enforcement
401 East State Street
P.O. Box 422
Trenton, NJ 08625

Consent Decree in the matter of United States et al. v. ConocoPhillips Company, Southern District of Texas (2005).

FOR CO-PLAINTIFF
COMMONWEALTH OF PENNSYLVANIA

Date

FRANCINE CARLINI
Regional Manager, Air Quality
Pennsylvania Department of Environmental Protection
2 East Main Street
Norristown, PA 19401
(484) 250-5920

Consent Decree in the matter of United States et al. v. ConocoPhillips Company, Southern District of Texas (2005).

FOR CO-PLAINTIFF
NORTHWEST CLEAN AIR AGENCY
A Municipal Corporation of the State of Washington

Date

LAUGHLAN H. CLARK, WSBA # 10996
Zender Thurston P.S.
1700 D St.
P.O. Box 5226
Bellingham, WA 98227
(360) 647-1500 - Phone
(360)647-1501 - Fax
Attorney-in-Charge for the Northwest Clean Air Agency, a municipal corporation of the State of Washington

Consent Decree in the matter of United States et al. v. ConocoPhillips Company, Southern District of Texas (2005).

FOR CONOCOPHILLIPS COMPANY

1-10-05
Date

L.M. ZIEMBA
President, Central/West Refining
ConocoPhillips
600 N. Dairy Ashford
Houston, Texas 77079
(281) 293-1000

Appendix A Tab Sheet

APPENDIX A

LIST OF FLARING DEVICES AT THE COVERED REFINERIES

Refinery	Name of Flare
Alliance	Low Pressure Flare (coker) High Pressure Flare Marine Vapor Recovery Flare – 406 D-15 Marine Vapor Recovery Flare – 406 D-16
Bayway	Poly Flare CLEU Flare ABW Flare Eastside Flare
Borger	East Refinery Flare West Refinery Flare ARDS Flare Cat Flare NGL Non-Corrosive Flare NGL Corrosive Flare Acid Gas Flare Derrick Flare
Ferndale	ZTOF
LAR Carson	LAR Carson East LAR Carson West
LAR Wilmington	LAR Wilmington North LAR Wilmington South LAR Wilmington Unicracker LPG Flare
Rodeo	19C-1 19C-602
Santa Maria	Flare

Sweeny	Unit 7 Flare
	Units 11/14 Flare
	Units 7/10D/18 Flare
	Units 10abc/12/51 LP Flare
	Units 10abc/12/68 HP Flare
	Units 15/17/19 Flare
	Expansion LP Flare
	Expansion HP Flare
	Unit 5 Flare
	Unit 30 Flare
	VDU/DCU Flare
	DEA Stripper Flare
	SW Stripper Flare
Trainer	Main Yard Flare
	Old Yard Flare
	Acid Gas Flare
	SWS Gas Flare
Wood River	Alkylation Flare
	Aromatics North Flare
	Aromatics South Flare
	Distilling West Flare
	North Property Ground Flare
	Lube (HCNHT) Flare
	Distilling Flare
	Benzene Loading Flare
	VOC Flare (and Spare)

Appendix B Tab Sheet

APPENDIX B

CONOCOPHILLIPS BORGER REFINERY

SOURCE		Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	Maximum Physical Heat Input Capacity (if different) mmBTU/hr (HHV)	Fuel Service	2000 Utilization Rate mmBTU/hr (HHV)	2000 NOx Emission Rate lb/mmBTU (HHV)	2000 NOx Emissions tons/year	2001 Utilization Rate mmBTU/hr (HHV)	2001 NOx Emission Rate lb/mmBTU (HHV)	2001 NOx Emissions tons/year	E (Actual) 2000-2001 Average NOx Emissions Emissions TPY	Emissions Factor Basis (emission factor, stack test, or CEMs data)
Crude Charge Heater	10 U117	98	N/A	RFG	70.0	0.070	21.5	79.0	0.070	24.2	22.8	Stack Tests
Rx Chg/Stab Reboiler	38 U910	68	N/A	RFG	42.9	0.085	15.9	46.4	0.085	17.2	16.6	portable analyzer
Crude Charge Heater	28 U626	183	N/A	RFG	125.0	0.128	70.2	143.0	0.064	40.1	55.1	CEM
Crude Charge Heater	9 U135	113	120	RFG	120.0	0.080	42.1	117.0	0.200	102.5	72.3	portable analyzer/stack test
#1 Reheater	19.02 T634	80	N/A	RFG	48.0	0.094	19.7	26.0	0.150	17.1	18.4	portable analyzer/stack test
#2 and #3 Reheater	19.02 T631	81	N/A	RFG	30.0	0.079	10.4	16.7	0.150	11.0	10.7	portable analyzer/stack test
Reformer Charge	19.02 T632	142	N/A	RFG	63.0	0.059	16.4	32.0	0.150	21.0	18.7	portable analyzer
Naphtha HDS Charge	19.01 T633	108	118	RFG	58.0	0.056	14.6	46.9	0.058	11.8	13.2	portable analyzer
Dist Rx Feed/Frac Feed	19.03 T661	139	N/A	RFG	61.0	0.040	10.7	38.0	0.080	13.3	12.0	Stack Test
Debutanizer Reboiler	29 N114	91	N/A	RFG	59.4	0.089	23.2	56.7	0.089	22.2	22.7	portable analyzer
Steam Methane Reformer	41 K312	897	N/A	RFG	806.0	0.050	176.1	539.0	0.050	118.0	147.1	CEM
ARDS Chg. East	42 K101	79	100	NG	48.0	0.120	25.2	24.0	0.120	12.6	18.9	Stack Tests
ARDS Chg. West	42 K102	79	100	NG	43.0	0.080	15.1	16.0	0.110	7.7	11.4	Stack Tests
Ethane Unit Superheater	11 C819	72	N/A	NG	39.0	0.190	32.5	84.0	0.120	44.2	38.3	portable analyzer
HDS Charge	2.2 E818	44	N/A	NG	30.6	0.087	11.7	21.9	0.113	10.8	11.3	Stack Tests
Col 45 Reboiler	2.5 G854	44	N/A	RFG	14.0	0.053	3.3	12.1	0.099	5.2	4.3	Stack Tests
Debutanizer Reboiler	26 T116	91	N/A	RFG	58.1	0.074	18.8	59.6	0.074	19.3	19.0	portable analyzer
Boiler	2.4 600# Stm	460	N/A	RFG	104.0	0.120	54.7	46.2	0.120	24.3	39.5	portable analyzer
Boiler	250# Stm	362	N/A	RFG	0.0	0.126	0.0	7.7	0.126	4.2	2.1	portable analyzer
Boiler	2.2 600# Stm	150	N/A	RFG	15.0	0.090	5.9	5.6	0.090	2.2	4.1	portable analyzer
Total		3359			1835		586.0	1417.8		529.0	558.5	

APPENDIX B

CONOCOPHILLIPS BORGER REFINERY - (INTERNAL COMBUSTION ENGINES)

SOURCE		Maximum or Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	Engine Service 2-stroke/ 4-stroke	2000 Utilization Rate mmBTU/hr (HHV)	2000 NOx Emission Rate lb/mmBTU (HHV)	2000 NOx Emissions tons/year	2001 Utilization Rate mmBTU/hr (HHV)	2001 NOx Emission Rate lb/mmBTU (HHV)	2001 NOx Emissions tons/year	E (Actual) 2000-2001 Average NOx Emissions Emissions TPY	Emissions Factor Basis (emission factor, stack test, or CEMs data)
Unit 12 Engine #46	12E6	3.3	4-stroke	3.8	4.267	71.0	3.6	2.083	33.1	52.1	avg. of other I.C.E. stack test data
Unit 55 Engine #1 (east)	55E1	6.0	2-stroke	5.2	2.500	57.3	5.5	2.500	60.1	58.7	stack test
Unit 55 Engine #2	55E2	6.0	2-stroke	5.2	0.320	7.3	5.5	0.320	7.7	7.5	stack test
Unit 55 Engine #3 (west)	55E3	6.0	2-stroke	5.2	3.429	78.5	5.5	3.429	82.5	80.5	stack test
Unit 93 Engine #37	93E1	6.8	2-stroke	3.5	2.170	33.1	3.8	2.170	36.3	34.7	stack test
Unit 93 Engine #38	93E3	6.8	2-stroke	3.5	4.830	70.6	3.8	2.753	46.1	58.3	avg. of other I.C.E. stack test data
Unit 93 Engine #40	93E4	4.5	4-stroke	2.7	4.267	50.5	3.0	2.753	35.7	43.1	avg. of other I.C.E. stack test data
Total		43.4		29.2		368.3	30.7		301.4	334.9	

APPENDIX B

CONOCOPHILLIPS FERNDALE REFINERY

SOURCE		Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	Maximum Physical Heat Input Capacity (if different) mmBTU/hr (HHV)	Fuel Service	2000 Utilization Rate mmBTU/hr (HHV)	2000 NOx Emission Rate lb/mmBTU (HHV)	2000 NOx Emissions tons/year	2001 Utilization Rate mmBTU/hr (HHV)	2001 NOx Emission Rate lb/mmBTU (HHV)	2001 NOx Emissions tons/year	E (Actual) 2000-2001 Average NOx Emissions Emissions TPY	Emissions Factor Basis (emission factor, stack test, or CEMs data)
Crude Charge	1F-1	191	N/A	RFG	164.0	0.230	165.2	165.5	0.230	166.7	166.0	portable analyzer
Crude Charge	1F-1A	96	N/A	RFG	76.1	0.083	27.8	70.3	0.078	24.1	25.9	AP 42
TCC Liquid Feed	4F-1A	102	N/A	RFG/NG	26.5	0.050	5.8	35.2	0.050	7.7	6.8	Source Test
Tar Separator Charge	4F-2	189	N/A	RFG	163.4	0.240	171.8	162.9	0.240	171.2	171.5	portable analyzer
Hydrotreating	14F-1,2	72	N/A	RFG	27.8	0.083	10.1	18.1	0.078	6.2	8.1	AP 42
Hydrofiner	18-F1	41	N/A	RFG	14.1	0.152	9.4	13.9	0.158	9.6	9.5	AP 42
Reformer	18-F21	47	N/A	RFG	40.0	0.100	17.5	40.7	0.100	17.8	17.7	portable analyzer
Reformer	18-F22	47	N/A	RFG	40.0	0.100	17.5	40.7	0.100	17.8	17.7	portable analyzer
Reformer	18-F23	47	N/A	RFG	40.0	0.120	21.0	40.7	0.120	21.4	21.2	portable analyzer
Reformer	18-F24	47	N/A	RFG	40.0	0.120	21.0	40.7	0.120	21.4	21.2	portable analyzer
Alky Reboiler	17F-1	106	N/A	RFG	60.3	0.129	34.1	66.7	0.129	37.8	36.0	portable analyzer
DHT	33F-1	48	N/A	RFG	20.3	0.064	5.7	21.4	0.064	6.0	5.8	Source Test
Boiler #1	22-F1C	182	N/A	NG	41.3	0.039	7.0	28.8	0.039	4.9	6.0	CEMS
Boiler #2	22-F1A	91	N/A	RFG	49.5	0.083	18.0	60.8	0.076	20.9	19.4	AP 42
Boiler #3	22-F1B	108	N/A	RFG	51.8	0.083	18.8	61.4	0.078	21.1	19.9	AP 42
Total		1396			855.1		550.5	867.8		554.6	552.6	

APPENDIX B

CONOCOPHILLIPS LOS ANGELES REFINERY - CARSON PLANT

SOURCE	Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	Maximum Physical Heat Input Capacity (if different) mmBTU/hr (HHV)	Fuel Service	2000 Utilization Rate mmBTU/hr (HHV)	2000 NOx Emission Rate lb/mmBTU (HHV)	2000 NOx Emissions tons/year	2001 Utilization Rate mmBTU/hr (HHV)	2001 NOx Emission Rate lb/mmBTU (HHV)	2001 NOx Emissions tons/year	E (Actual) 2000-2001 Average NOx Emissions Emissions TPY	Emissions Factor Basis (emission factor, stack test, or CEMs data)
Boiler 10	352	N/A	RFG, NG	207.7	0.071	64.6	187.0	0.069	56.5	60.6	CEM
Boiler 11	352	N/A	RFG, NG	207.4	0.078	70.9	166.1	0.076	55.3	63.1	CEM
Crude Heater	350	N/A	RFG, NG	329.8	0.066	95.3	254.3	0.063	70.2	82.8	CEM
Heater 31	175	N/A	RFG, NG, Merox Offgas	125.5	0.058	31.9	43.6	0.068	13.0	22.4	CEM
Heater 32	175	N/A	RFG, NG, Merox Offgas	161.9	0.052	36.9	46.8	0.066	13.5	25.2	CEM
Heater 33	154	N/A	RFG, NG	139.1	0.080	48.7	92.0	0.047	16.9	33.8	CEM
Heater 34	154	N/A	RFG, NG	137.3	0.110	66.2	94.3	0.036	14.9	40.5	CEM
Heater 38	340	N/A	RFG, NG	210.5	0.135	124.5	209.1	0.086	78.8	101.6	CEM
Heater 40	70	N/A	RFG, NG	36.3	0.070	11.1	46.6	0.072	14.7	12.9	CEM
Total	2121			1555.5		550.0	1139.8		335.8	442.9	

APPENDIX B

CONOCOPHILLIPS LOS ANGELES REFINERY - WILMINGTON PLANT

SOURCE		Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	Maximum Physical Heat Input Capacity (if different) mmBTU/hr (HHV)	Fuel Service	2000 Utilization Rate mmBTU/hr (HHV)	2000 NOx Emission Rate lb/mmBTU (HHV)	2000 NOx Emissions tons/year	2001 Utilization Rate mmBTU/hr (HHV)	2001 NOx Emission Rate lb/mmBTU (HHV)	2001 NOx Emissions tons/year	E (Actual) 2000-2001 Average NOx Emissions Emissions TPY	Emissions Factor Basis (emission factor, stack test, or CEMs data)
118	H-401	460	N/A	RFG, NG, PSA Wastegas	254.6	0.006	6.7	266.5	0.005	5.8	6.3	CEM
Boiler 4		142	N/A	RFG, NG	16.8	0.350	25.8	19.8	0.278	24.1	24.9	CEM
Boiler 6		250	N/A	RFG, NG	90.7	0.086	34.2	120.1	0.091	47.9	41.0	CEM
Boiler 7		304	N/A	RFG, NG	108.2	0.237	112.3	70.2	0.185	56.9	84.6	CEM
Boiler 8		179	N/A	RFG, NG	57.0	0.169	42.2	70.1	0.132	40.5	41.4	CEM
Cogen Unit		646	N/A	RFG/NG mix, NG, C4	472.5	0.025	51.7	500.2	0.022	48.2	50.0	CEM
Duct burner		99	N/A	RFG or NG	38.6	0.031	5.2	6.6	0.035	1.0	3.1	CEM
59	B-101	60	N/A	RFG, NG	29.2	0.236	30.2	37.8	0.150	24.8	27.5	CEM
80	B-101	116	N/A	RFG, NG	48.3	0.172	34.9	48.5	0.089	14.7	24.8	CEM
80	B-102	68	N/A	RFG, NG	36.6	0.173	27.7	44.8	0.083	12.4	20.0	CEM
80	B-103	71	N/A	RFG, NG	23.7	0.152	15.8	23.5	0.095	9.8	12.8	CEM
80	B-104	56	N/A	RFG, NG	22.4	0.147	14.4	31.8	0.084	8.9	11.7	CEM
90	B-202	76	N/A	RFG, NG	50.8	0.152	33.8	39.4	0.066	11.4	22.6	CEM
100	H-100	110	N/A	RFG, NG	71.1	0.083	25.8	63.7	0.082	22.9	24.4	CEM
100	H-101	100	N/A	RFG, NG	46.2	0.084	17.0	30.4	0.083	11.1	14.0	CEM
100	H-102	70	N/A	RFG, NG	23.3	0.076	7.8	30.8	0.084	11.3	9.5	CEM
100	H-103	42	N/A	RFG, NG	20.9	0.075	6.9	21.0	0.084	7.7	7.3	CEM
119	B-101	350	N/A	RFG, NG	190.1	0.030	25.0	148.0	0.018	11.7	18.3	CEM
120	B-204	135	N/A	RFG, NG	74.9	0.264	86.6	77.0	0.090	30.4	58.5	CEM
152	B-201	51	N/A	RFG, NG	22.6	0.120	11.9	20.7	0.118	10.7	11.3	CEM
Total		3385			1696.5		615.9	1670.9		412.1	514.0	

APPENDIX B

CONOCOPHILLIPS RODEO REFINERY

SOURCE		Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	Maximum Physical Heat Input Capacity (if different) mmBTU/hr (HHV)	Fuel Service	2000 Utilization Rate mmBTU/hr (HHV)	2000 NOx Emission Rate lb/mmBTU (HHV)	2000 NOx Emissions tons/year	2001 Utilization Rate mmBTU/hr (HHV)	2001 NOx Emission Rate lb/mmBTU (HHV)	2001 NOx Emissions tons/year	E (Actual) 2000-2001 Average NOx Emissions Emissions TPY	Emissions Factor Basis (emission factor, stack test, or CEMs data)
110	H-1	210	N/A	RFG	133.8	0.010	5.9	129.6	0.010	5.7	5.8	CEM
200	B-5	103	N/A	RFG	73.1	0.060	25.5	85.7	0.031	11.6	18.5	Semi Annual Test
200	B-101	50	N/A	RFG	40.5	0.074	13.1	47.5	0.039	8.1	10.6	Semi Annual Test
200	B-201	46	N/A	RFG	30.6	0.042	5.6	29.9	0.042	5.5	5.6	CEM
200	B-202	230	N/A	RFG	187.0	0.028	22.9	172.2	0.015	11.3	17.1	CEM
228	B-520/521	58	N/A	RFG	29.5	0.016	2.1	29.7	0.016	2.1	2.1	CEM
229	B-103	64	N/A	RFG	34.3	0.055	8.3	32.2	0.055	7.8	8.0	Semi Annual Test
230	B-201	62	N/A	RFG	34.8	0.042	6.4	32.8	0.042	6.0	6.2	Semi Annual Test
231	B-101	96	N/A	RFG	53.4	0.075	17.4	50.2	0.039	8.6	13.0	Semi Annual Test
231	B-102	104	N/A	RFG	58.4	0.082	21.0	55.0	0.047	11.3	16.2	Semi Annual Test
231	B-104	111	N/A	RFG	58.4	0.095	24.2	58.3	0.032	8.2	16.2	Semi Annual Test
240	B-101	223	N/A	RFG	127.6	0.124	69.3	155.1	0.124	84.3	76.8	Semi Annual Test
240	B-201	108	N/A	RFG	32.3	0.085	12.0	44.2	0.032	6.2	9.1	Semi Annual Test
240	B-202	42	N/A	RFG	22.3	0.168	16.4	22.8	0.168	16.8	16.6	Semi Annual Test
240	B-301	194	N/A	RFG	136.9	0.173	103.5	152.1	0.012	8.0	55.7	CEM
240	B-401	556	N/A	RFG	305.8	0.086	115.2	331.5	0.086	124.9	120.0	CEM
244	B-501 to 505	239	N/A	RFG	95.6	0.109	45.6	114.5	0.109	54.7	50.1	CEM
31	B-1	256	N/A	RFG	97.0	0.178	75.6	103.7	0.178	80.8	78.2	Semi Annual Test
31	B-2	61	N/A	RFG	32.3	0.168	23.8	34.4	0.168	25.3	24.5	Semi Annual Test
267	B-601/602	101	N/A	RFG	59.9	0.030	7.9	64.7	0.030	8.5	8.2	CEM
Total		2914			1643.6		621.6	1746.2		495.6	558.6	

APPENDIX B

CONOCOPHILLIPS SANTA MARIA REFINERY

SOURCE		Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	Maximum Physical Heat Input Capacity (if different) mmBTU/hr (HHV)	Fuel Service	2000 Utilization Rate mmBTU/hr (HHV)	2000 NOx Emission Rate lb/mmBTU (HHV)	2000 NOx Emissions tons/year	2001 Utilization Rate mmBTU/hr (HHV)	2001 NOx Emission Rate lb/mmBTU (HHV)	2001 NOx Emissions tons/year	E (Actual) 2000-2001 Average NOx Emissions TPY	Emissions Factor Basis (emission factor, stack test, or CEMs data)
Crd A	B2A	77	N/A	RFG	71.7	0.034	10.6	75.6	0.031	10.3	10.4	Stack Test
Crd B	B2B	76	N/A	RFG	73.8	0.035	11.2	70.7	0.031	9.6	10.4	Stack Test
Cok A	B102A	81	N/A	RFG	61.5	0.032	8.5	68.1	0.030	8.9	8.7	Stack Test
Cok B	B102B	81	N/A	RFG	64.0	0.031	8.6	64.7	0.034	9.6	9.1	Stack Test
Util	B-504	125	N/A	RFG+NG	104.8	0.034	15.8	97.3	0.029	12.4	14.1	Stack Test
Util	B-506	127	N/A	RFG+NG	93.2	0.033	13.5	87.1	0.028	10.7	12.2	Stack Test
Util	B-505	100	N/A	RFG+NG	77.3	0.032	10.8	77.0	0.031	10.5	10.6	Stack Test
Total		666			546.3		79.2	540.5		71.9	75.6	

APPENDIX B

CONOCOPHILLIPS SWEENY REFINERY

SOURCE		Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	Maximum Physical Heat Input Capacity (if different) mmBTU/hr (HHV)	Fuel Service	2000 Utilization Rate mmBTU/hr (HHV)	2000 NOx Emission Rate lb/mmBTU (HHV)	2000 NOx Emissions tons/year	2001 Utilization Rate mmBTU/hr (HHV)	2001 NOx Emission Rate lb/mmBTU (HHV)	2001 NOx Emissions tons/year	E (Actual) 2000-2001 Average NOx Emissions Emissions TPY	Emissions Factor Basis (emission factor, stack test, or CEMs data)
FCC Charge Heater	3-36-4	121	N/A	RFG	54.4	0.077	18.3	25.2	0.077	8.5	13.4	Stack Test
Crude Charge Heater	9-36-4	211	N/A	RFG	193.1	0.047	39.8	187.2	0.047	38.5	39.1	Stack Test
Prefrac Reboiler Heater	11-36-1	67	N/A	RFG	37.7	0.095	15.7	42.6	0.095	17.7	16.7	Stack Test
Reformer HDS Heater	11-36-5	70	N/A	RFG	42.0	0.040	7.3	41.1	0.040	7.2	7.3	Stack Test
Reboiler Heater	14-36-3	88	N/A	RFG	46.3	0.072	14.6	56.4	0.072	17.8	16.2	Stack Test
HDS Charge Heater	14-36-4	53	N/A	RFG	38.0	0.111	18.5	21.0	0.111	10.2	14.4	Stack Test
Crude Charge Heater	25.1-36-1	407	N/A	RFG	322.7	0.170	240.3	349.3	0.170	260.1	250.2	Stack Test
HDS Charge Heater	25.2-36-51	45	N/A	RFG	25.9	0.160	18.1	24.3	0.262	27.9	23.0	Stack Test
HDS Reboiler	25.2-36-52	62	N/A	RFG	33.6	0.160	23.5	33.0	0.262	37.9	30.7	Stack Test
Charge Heater	26-36-1	101	N/A	RFG	58.7	0.195	48.5	68.2	0.195	58.2	53.3	Stack Test
Charge Heater	26-36-1.1	101	N/A	RFG	57.3	0.110	27.6	79.4	0.110	38.3	32.9	Stack Test
Recycle Gas Heater	26-36-2	41	N/A	RFG	20.2	0.088	7.8	25.2	0.152	16.8	12.3	Stack Test
Recycle Gas Heater	26.36-2.1	41	N/A	RFG	22.0	0.091	8.7	29.6	0.152	19.7	14.2	Stack Test
Vacuum Charge Heater	29.1-36-1	277	N/A	RFG	42.3	0.040	7.4	242.3	0.040	42.4	24.9	Stack Test
Coker Charge Heater	29.2-36-1	202	N/A	RFG	25.2	0.025	2.8	162.9	0.025	17.8	10.3	Stack Test
Coker Charge Heater	29.2-36-2	202	N/A	RFG	26.5	0.025	3.1	167.3	0.025	18.3	10.7	Stack Test
Isostripper Heater	30-36-1	91	N/A	RFG	65.0	0.036	10.3	36.4	0.036	5.7	8.0	Stack Test
CCR Charge Heater	35-36-1	507	N/A	RFG	94.8	0.032	13.3	268.0	0.032	40.4	26.8	Stack Test
Total		2687			1205.4		525.5	1879.4		683.5	604.5	

APPENDIX B

CONOCOPHILLIPS TRAINER REFINERY

SOURCE		Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	Maximum Physical Heat Input Capacity (if different) mmBTU/hr (HHV)	Fuel Service	1999 Utilization Rate mmBTU/hr (HHV)	1999 NOx Emission Rate lb/mmBTU (HHV)	1999 NOx Emissions tons/year	2000 Utilization Rate mmBTU/hr (HHV)	2000 NOx Emission Rate lb/mmBTU (HHV)	2000 NOx Emissions tons/year	E (Actual) 1999-2000 Average NOx Emissions Emissions TPY	Emissions Factor Basis (emission factor, stack test, or CEMs data)
Boilerhouse	#6 Boiler	180	N/A	RFG/Oil	99.0	0.240	104.1	105.4	0.240	110.8	107.4	02/94 Stack Test
Boilerhouse	#7 Boiler	335	N/A	RFG/Oil	205.4	0.420	377.9	165.3	0.350	253.4	315.6	CEM
Boilerhouse	#8 Boiler	335	N/A	RFG/Oil	137.6	0.369	222.4	190.8	0.400	334.3	278.3	CEM
FCC Unit	FCC Feed Heater	100	N/A	RFG	74.8	1.680	550.4	73.7	1.650	532.6	541.5	02/94 Stack Test
Naphtha HDS Unit	Naphtha HDS Htr	93	N/A	RFG	59.2	0.100	25.9	67.7	0.100	29.7	27.8	02/94 Stack Test
Platformer Unit	Platformer Htrs (4)	917	N/A	RFG	615.4	0.138	372.0	610.1	0.138	368.8	370.4	CEM
Isocracker Unit	Iso 1st Stage Htr	56	N/A	RFG	17.9	0.100	7.8	25.4	0.140	15.6	11.7	AP-42
Isocracker Unit	Iso Splitter Rblr	76	N/A	RFG	57.5	0.100	25.2	62.0	0.100	27.2	26.2	AP-42
VGO HDS Unit	VGO HDS Htr	56	N/A	RFG	41.1	0.100	18.0	52.3	0.100	22.9	20.5	AP-42
541 Vacuum Unit	541 Vac Htr	56	N/A	RFG	37.0	0.130	21.1	39.9	0.130	22.7	21.9	02/94 Stack Test
542 Vacuum Unit	542 Vac Htr	72	N/A	RFG	38.6	0.077	13.0	42.0	0.077	14.2	13.6	06/99 Stack Test
543 Crude Unit	543 Crude Htr	360	N/A	RFG	228.5	0.038	38.0	260.4	0.038	43.3	40.7	CEM
544 Crude Unit	544 Crude Htr	360	N/A	RFG	227.1	0.050	49.7	261.8	0.050	57.3	53.5	CEM
544 Vac Unit	544 Vac Htr	160	N/A	RFG	67.3	0.420	123.8	77.7	0.420	142.9	133.4	02/94 Stack Test
Total		3156			1906.4		1949.3	2034.5		1975.7	1962.5	

APPENDIX B

CONOCOPHILLIPS WOOD RIVER REFINERY (EXCEPT DISTILLING WEST)

SOURCE		Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	Maximum Physical Heat Input Capacity (if different) mmBTU/hr (HHV)	Fuel Service	2000 Utilization Rate mmBTU/hr (HHV)	2000 NOx Emission Rate lb/mmBTU (HHV)	2000 NOx Emissions tons/year	2001 Utilization Rate mmBTU/hr (HHV)	2001 NOx Emission Rate lb/mmBTU (HHV)	2001 NOx Emissions tons/year	E (Actual) 2000-2001 Average NOx Emissions Emissions TPY	Emissions Factor Basis (emission factor, stack test, or CEMs data)
ALKY	HM-2 Heater	110	N/A	RFG	69.4	0.290	88.2	67.9	0.290	86.3	87.2	AP-42
BEU	HM-1 Heater	110	N/A	RFG	84.4	0.290	107.3	70.3	0.290	89.3	98.3	AP-42
BEU	HM-2 Heater	110	N/A	RFG	44.1	0.290	56.0	45.7	0.290	58.1	57.1	AP-42
Boiler	Boiler 15	360	N/A	RFG	213.0	0.190	177.3	202.1	0.190	168.2	172.7	stack test
Boiler	Boiler 16	360	N/A	RFG	225.4	0.190	187.6	206.4	0.190	171.8	179.7	stack test
Boiler	Boiler 17	700	N/A	RFG	386.7	0.160	271.0	349.6	0.160	245.0	258.0	stack test
Boiler	Boiler 18	249	N/A	RFG	0.0	0.210	0.0	11.5	0.210	10.6	5.3	stack test
				NG	82.8	0.196	71.1	93.3	0.196	80.2	75.6	stack test
CAU	RO Still Heater	95	115	RFG	64.6	0.104	29.3	63.6	0.104	28.9	29.1	AP-42
CR-1	Feed Preheat, H-1	165	N/A	RFG	131.3	0.045	25.9	92.9	0.045	18.3	22.1	Portable Analyzer
CR-1	1st Interreactor Htr, H-2	162	N/A	RFG	128.9	0.144	81.3	91.2	0.144	57.5	69.4	Portable Analyzer
				OIL	21.4	0.800	75.0	31.8	0.800	111.4	93.2	AP-42
CR-1	2nd Interreactor Htr, H-3	78	98	RFG	62.1	0.054	14.7	43.9	0.054	10.4	12.5	Portable Analyzer
CR-1	H-4	40	N/A	RFG	31.8	0.121	16.9	22.5	0.121	11.9	14.4	Portable Analyzer
CR-1	3rd Interreactor Htr, H-7	100	126	RFG	79.6	0.192	66.9	56.3	0.192	47.3	57.1	Portable Analyzer
CR-2	North/South Heater	275	N/A	RFG	123.9	0.290	157.5	132.4	0.290	168.3	162.9	AP-42
CR-3	Charge Heater, H-4	145	N/A	RFG	86.3	0.296	111.9	81.4	0.296	105.5	108.7	Portable Analyzer
				OIL	58.0	0.800	203.2	55.6	0.800	194.8	199.0	AP-42
CR-3	1st Reheat Heater, H-5	141	N/A	RFG	84.1	0.359	132.2	79.3	0.359	124.7	128.5	Portable Analyzer
				OIL	56.5	0.800	198.0	54.2	0.800	189.9	193.9	AP-42
CR-3	2nd Reheat Heater, H-6	74	N/A	RFG	44.1	0.215	41.5	41.6	0.215	39.2	40.4	Portable Analyzer
				OIL	29.7	0.800	104.1	28.4	0.800	99.5	101.8	AP-42
DHT	Charge Heater	108	N/A	RFG	55.7	0.063	15.4	45.1	0.063	12.4	13.9	mfr estimate
DU-1	Prim Htr South, F-301	120	N/A	RFG	109.1	0.069	33.0	92.5	0.069	28.0	30.5	Portable Analyzer
DU-1	Sec Htr North, F-302	200	N/A	RFG	160.6	0.065	59.8	138.9	0.065	51.0	55.4	Portable Analyzer
DU-2	Lube Crude Htr, F-200	151	N/A	RFG	114.4	0.166	83.2	117.9	0.166	85.7	84.5	Portable Analyzer
DU-2	Crude Htr West, F-202	231	N/A	RFG	165.8	0.074	53.7	160.0	0.074	51.9	52.8	Portable Analyzer
DU-2	Crude Htr East, F-203	231	N/A	RFG	160.6	0.069	62.7	141.6	0.089	55.2	58.9	Portable Analyzer
DU-2	Vac Flash Htr W, F-204	61	N/A	RFG	31.6	0.144	19.9	28.4	0.144	17.9	18.9	Portable Analyzer
DU-2	Vac Flash Htr E, F-205	61	N/A	RFG	29.9	0.130	17.0	32.1	0.130	18.3	17.7	Portable Analyzer
HCU	1st Stage Heater, H-1	70	86	RFG	38.7	0.041	6.9	39.3	0.041	7.1	7.0	Portable Analyzer
HCU	2nd Stage Heater, H-2	70	86	RFG	80.6	0.083	29.3	78.1	0.083	28.4	28.8	Portable Analyzer
HCU	Fractionator Reboil, H-3	235	N/A	RFG	196.7	0.155	133.5	185.7	0.155	126.1	129.8	Portable Analyzer
HDU-1	Heater	67	N/A	RFG	46.8	0.104	21.2	49.6	0.104	22.5	21.9	AP-42
HDU-2	Charge Heater	81	N/A	RFG	58.6	0.254	65.2	55.4	0.254	61.6	63.4	Portable Analyzer
KHT-1	Heater	103	N/A	RFG	90.9	0.290	115.5	79.8	0.290	101.2	108.3	AP-42
RAU	Debutanizer Heater	69	N/A	RFG	53.9	0.104	24.5	43.2	0.104	19.6	22.0	AP-42
RAU	Abs/Deethanizer Htr	85	N/A	RFG	47.3	0.104	21.5	30.5	0.104	13.8	17.7	AP-42
SMR	SMR Heater	460	N/A	RFG	188.8	0.192	158.8	193.4	0.192	162.6	160.7	Portable Analyzer
VF-1	VF-1 North Heater	100	N/A	NG	57.1	0.097	24.2	40.2	0.097	17.0	20.6	AP-42
VF-1	VF-1 South Heater	100	N/A	NG	57.1	0.097	24.2	40.2	0.097	17.0	20.6	AP-42
Total		5877			3852.5		3186.3	3511.6		3014.4	3100.4	

Appendix C Tab Sheet

APPENDIX C

LIST OF ASSETS CONOCOPHILLIPS PURCHASED FROM THE PREMCOR REFINING GROUP IN HARTFORD, ILLINOIS

1. Process Units.

(a) The crude/vacuum unit and saturate gas plant, with major equipment consisting of the crude heater, vacuum heater, heat medium heater H-25, 2 desalters, atmospheric column and vacuum column, including all associated pumps, compressors, vessels, exchangers, columns, piping, instruments, and other associated equipment.

(b) The coker, coker gas plant and coker naphtha hydrotreater (No. 2 unifiner), with major equipment consisting of the 3 coke drums with 3 K-Rays per drum with radioactive sources, 2 coker heaters, fractionator, sour water stripper system, boiler, hydrotreater heater, and hydrotreater reactor, including all associated pumps, compressors, vessels, exchangers, columns, piping, instruments and other associated equipment, and equipment needed for coke handling, including the coke crusher, truck wash, truck scale and computer hardware/software, coker maze with clarifier and jet pump tank and coke laydown yard. This also includes the centrifuge and Alternative Coker Feed Material (ACFM) unit (also known as the coker sludge injection system or MOSC unit) with feed system including tanks.

(c) The fluidized catalytic cracking (FCC) unit and gas plant, with major equipment consisting of the reactor, regenerator, wet gas compressor, air blower and fractionator, including all associated pumps, compressors, vessels, exchangers, columns, piping, instruments and other associated equipment, catalyst handling equipment, propylene driers, C3/C4 splitter system, summer blend system (including iC4/nC4 splitter and debutanizer), and the Merox unit.

(d) The HF alkylation unit and feed preparation, with major equipment consisting of the reactor, mixer settler and fractionator, including all associated pumps, compressors, vessels, exchangers, columns, heaters, dryers, treaters, piping, instruments and other associated equipment, acid handling equipment, caustic system, HF acid detection system, and rapid acid de-inventorying system.

(e) The total isomerization process (TIP) unit, with major equipment consisting of the hydrotreater heater, hydrotreater reactor, steam methane reformer (SMR) heater, pressure swing absoption (PSA) unit, reactors and isosieves, including all associated pumps, compressors, vessels, exchangers, columns, piping, instruments and other associated equipment.

2. Utilities.

(a) Steam system, including #5 boiler, #4 boiler, distribution system, condensate system, and associated pumps, fans, vessels, exchangers, piping, instruments and other associated equipment. It excludes that portion of the steam and condensate system not on the Premises, except for the steam distribution piping and condensate headers necessary to connect the various parcels comprising the Premises.

(b) Boiler feedwater (BFW) system, including the hot lime softener system, BFW chemical injection systems, lime handling system, lime sludge handling system, distribution system and associated pumps, fans, vessels, tanks, exchangers, piping, instruments and other associated equipment.

(c) Filter press system and building, including associated pumps, compressors, fans, vessels, tanks, exchangers, piping, instruments and other associated equipment. This includes the piping and equipment used to transfer lime sludge from the hot and cold lime softeners to the filter press.

(d) Cooling water system, including the cold lime softener system, cooling water tower #3, cooling water tower #4, cooling water tower #5, cooling water chemical injection systems, lime handling system, lime sludge handling system, distribution system and associated pumps, fans, vessels, tanks, exchangers, piping, instruments and other associated equipment. It excludes that portion of the cooling water system not on the Premises, except for the cooling water distribution piping and headers necessary to connect the various parcels comprising the Premises.

(e) Firewater system, including the pumphouse and firewater pumps (but not the firewater supply pond), distribution piping, hydrants/monitors, firewater isolation valves, and other associated equipment at the Refinery. It excludes that portion of the firewater system that extends south of Hawthorne Avenue from the point it leaves that portion of the Refinery north of Hawthorne Avenue.

(f) Flare systems, including the main flare and backup ground flare, pumps, fans, vessels, piping, instruments, monitors/cameras and other associated equipment. It excludes that portion of the flare system not on the Premises. This also includes the new flare tip that has yet to be installed.

(g) Electrical systems, including the four electrical substations, the #3 incoming line transformer (flare backup power supply), meters, load management program (including any software necessary to operate this system) as well as the switchgear, backup instrument power supply generators, motor control centers and distribution system associated with the Assets. It excludes any portion of the electrical system from the point where it exclusively supplies a Seller load. Drawings more fully describing this system are attached to this Agreement as Attachment 1 (not attached).

(h) Nitrogen system, including the system supply lines and meter from third-party suppliers currently owned by Seller, instruments, distribution system and other associated equipment associated with operating the Assets. It excludes that portion of the nitrogen distribution system not on the Premises, except for the nitrogen piping necessary to connect the various parcels comprising the Premises and except for the supply lines from third-party suppliers currently owned by Seller.

(i) Air system, including the plant and instrument air systems, air compressors, dryers and plant air moisture analyzer. This includes the instruments, distribution system and other associated equipment associated with operating the Assets. It excludes that portion of the air system not on the Premises except for the distribution piping and headers necessary to connect the various parcels comprising the Premises.

(j) Fuel systems, including natural gas system, refinery fuel gas system, amine treating system, vessel PV206 and associated pumps, and fuel gas H_2S analyzer. This includes the pumps, vessels, contactors, piping, instruments and other associated equipment servicing the Assets. It excludes that portion of the fuel gas supply and distribution piping not on the Premises, except for the

fuel distribution piping necessary to connect the various parcels comprising the Premises and except for the natural gas supply line from a third-party supplier to the fuel gas mix drum.

(k) The rail car loading and unloading rack, including the LPG, propylene and butylene loading and unloading piping and hoses, the rail tracks, pumps, vessels, piping, instruments and other associated equipment.

(l) Heat medium heater H-35, pumps, vessels, filters, supply piping, circulating piping, instrumentation and other associated equipment. It excludes that portion of the heating medium system not on the Premises, except for the supply and return piping headers necessary to connect the various parcels comprising the Premises and except for the filter and connecting piping.

3. Tankage.

(a) Atmospheric storage tanks consisting of 10-21, 20-2, 35-1, 35-2, 35-3, 55-1, 55-2, 55-3, 80-1, 80-2, 80-6, 80-9, 120-6, and 200-1. This includes all associated instruments (including levels, secondary level alarms, pressures and temperatures), instrument transmission wires/cables from the tank to the field junction boxes, tank strapping tables, and other associated equipment. Piping and pumps included with this tankage is shown on Attachment 4 (not attached).

(b) Butane spheres 15-1 and 15-2.

(c) Isobutane spheres 10-24 and 10-25.

(d) Propane bullets T-1-3, T-1-4, T-1-5, T-1-6, T-1-7, T-1-8, T-1-10, T-1-11, T-1-12 and T-1-13.

(e) This includes all associated pumps, piping, instruments (including levels, secondary level alarms, pressures and temperatures), instrument transmission wires/cables from the tank to the field junction boxes, tank strapping tables, and other associated equipment in connection with (b) through (d) above. This includes the field junction box and instrument transmission wires/cables from the field junction box to the #2 pump pit control room for (b) through (d) above.

4. Piping, Pipe Racks and Pumps.

(a) All pipe racks and piping on the Premises, except for (i) the piping noted in Attachment 2 (not attached) and not sold to Buyer, (ii) any underground gaseous or liquid hydrocarbon piping except as otherwise noted, and (iii) the piping in Attachment 4 (not attached) not sold to Buyer.

(b) The pipe rack and piping that traverses from the Refinery north tank farm area (southeast corner of Tank 80-5 tankyard) through Buyer's sulfur plant and wastewater treating plant area and bridge over Buyer's wastewater treating plant road and Rand Avenue, including the six-inch Amoco line and three (3) four-inch propylene lines and pipe rack, to the Amoco terminal, except for the piping described in Attachment 3 (not attached).

(c) The transfer piping and pumps in the Refinery north tank farm area as described more fully in Attachment 4 (not attached), tank farm piping and instrument drawings.

The oily water sewer system on and beneath the Premises.

(e) Tank 20-2 pumps P-1204, P-938 and P-501 that do not reside in 20-2 tank yard.

(f) Pump P-712 in tank 80-3 tank yard to be removed from 80-3 tank yard by Buyer at Buyer's expense.

5. Buildings. Those buildings described in Attachment 5 (not attached).

6. Documents.

(a) Refinery Records.

(b) Documentation and electronic data/models consisting of all engineering, maintenance and inspection records, equipment records, management of change records, process safety management documentation, PHA/HazOp reports, P&IDs, process models and data, operating and training manuals and design manuals and LP model including any existing documentation.. The LP model transferred may exclude any crude data and any contemplated refinery configuration changes (e.g. new processing units) where disclosure of the data is limited by agreement with other parties.

(c) Design data and detailed process and mechanical drawings for FCC scrubber if part of the Refinery Records.

7. Other.

(a) All spare parts and supplies specifically associated with the items described in Paragraphs 1 through 5 of this Appendix C, including:

(i) Big coker jet pump spare motor
(ii) Coker combination drill bits from Port Arthur refinery*
(iii) Coker gas compressor surge control system and program
(iv) Coker gas compressor spare motor
(v) Coker gas compressor spare element
(vi) Coker 12" switching spare valve
(vii) Coker spare wedge plug valves
(viii) Coker spare drum driller rotary joint
(ix) Coker spare drum driller hoist/winch
(x) Crude overhead water pH analyzer
(xi) New vacuum tower bottoms spare pump
(xii) Two new vacuum LVGO pumps
(xiii) Two new vacuum HVGO pumps
(xiv) FCC WGC spare element
(xv) FCC spare air blower element
(xvi) FCC spare air blower motor coils
(xvii) FCC spare double disk and spent slide valves
(xviii) Flare spare fan
(xix) New flare tip
(xx) New flare pilots

(xxi) Old coker NHT reactor
(xxii) All electrical equipment, electrical spares, instrumentation spares and burner management system equipment in the Litwin (B-94) and Sales (B-75) buildings and the Asphalt building (B-29) associated with the units described in this Appendix C, Sections 1 and 2.

* Note: Seller will separately invoice Buyer for disassembly costs (if any) and transportation costs necessary to move these drill bits from Port Arthur to Hartford.

(b) DHDS rundown air coolers.

(c) The fiber optics cables labeled as #14, #15, #16, #17 and #22 on Attachment 6 (not attached). 50% of the fibers in the remaining fiber optics cables throughout the Refinery on Attachment 6 (not attached).

(d) Emergency response equipment associated with the purchased units.

(e) One foam tanker fire truck.

(f) Two coke loaders equivalent or better than the two coke loaders at the Refinery prior to Seller's shutdown.

(g) Maintenance equipment at the Refinery not currently being used by Seller for its terminaling operations at the Refinery.

Appendix D Tab Sheet

APPENDIX D

DETERMINING THE OPTIMIZED ADDITION RATES OF CATALYST ADDITIVES AT THE FCCUs

I. PURPOSE

This Appendix defines a process for the applicable FCCUs by which COPC will replace conventional combustion promoter with Low NO_x Combustion promoter, if combustion promoter is needed and if Low NO_x Combustion Promoter is effective. It also defines a process by which COPC will determine for the applicable FCCUs the Optimized Addition Rates for NO_x Reducing Catalyst Additives and SO_2 Reducing Catalyst Additives during the optimization periods.

II. REPLACING CONVENTIONAL NO_x COMBUSTION PROMOTER WITH LOW NO_x COMBUSTION PROMOTER

A. **Overview.** Replacing conventional combustion promoter with Low NO_x Combustion Promoter is a two-step process: (1) replacing the conventional combustion promoter with Low NO_x Combustion Promoter at an addition rate that is the functional equivalent of the addition rate used by COPC for conventional combustion promoter during the baseline period; and (2) increasing the addition rate up to two times the functional equivalent rate if the functional equivalent rate is not effective.

B. **"Effectiveness" Determination.** The criteria for determining the effectiveness of Low NO_x Combustion Promoter are: (1) afterburn is controlled adequately and regenerator temperature and combustion levels are adequately maintained; (2) temperature excursions are brought under control adequately; (3) carbon monoxide (CO) control is adequately maintained; and (4) a measureable reduction in NO_x emissions occurs.

C. **Establishing the Functional Equivalent Rate for Low NO_x Combustion Promoter.**

(1) COPC will replace conventional combustion promoter with Low NO_x Combustion Promoter at a rate that is the functional equivalent in promotion activity of the addition rate used by COPC for conventional combustion promoter during the baseline period.

(2) COPC will propose to EPA for approval, with a copy to the Applicable Co-Plaintiff, a Low NO_x Combustion Promoter functional equivalent rate based on: (i) vendor recommendations; (ii) information available to COPC regarding the performance of the Low NO_x Combustion Promoter in other FCCUs; (iii) unit-specific considerations; and (iv) any other available and relevant information. As set forth in Paragraph 44 of the Consent Decree, COPC will submit its proposed functional equivalent rate at least six (6) months prior to the completion of the baseline period.

(3) Regardless of whether or not, prior to the completion of the baseline period, EPA has approved COPC's proposed functional equivalent rate, COPC will commence the replacement of conventional combustion promoter with Low NO_x Combustion Promoter by no later than the dates set forth in Paragraph 44 of the Decree. COPC will add Low NO_x Combustion Promoter at the functional equivalent rate that it proposes under Subparagraph I.C.(2). COPC will continue to add Low NO_x Combustion Promoter at this rate unless EPA approves a different rate.

D. **Doubling the Low NO_x Combustion Promoter Functional Equivalent Rate.** If the Low NO_x Combustion Promoter is not effective at the functional equivalent rate, COPC will double the rate. If, at two times the functional equivalent rate, the Low NO_x Combustion Promoter is not effective, COPC may discontinue the use of Low NO_x Combustion Promoter.

III. ESTABLISHING AN OPTIMIZED NO_x REDUCING CATALYST ADDITIVE ADDITION RATE

A. Overview. The Optimized NO_x Reducing Catalyst Additive Addition Rate will be determined by evaluating NO_x emissions reductions and annualized costs at three different addition rates.

B. The Increments. The three addition rates or "increments" will be:

1.0 Weight % NO_x Reducing Catalyst Additive
1.5 Weight % NO_x Reducing Catalyst Additive
2.0 Weight % NO_x Reducing Catalyst Additive

C. The Procedure. COPC will successively add NO_x Reducing Catalyst Additive at each increment set forth above. Once a steady state has been achieved at each increment, COPC will evaluate the performance of the NO_x Reducing Catalyst Additive in terms of NO_x emissions reductions and projected annualized costs. The final Optimized NO_x Reducing Catalyst Additive Addition Rate, in pounds per day, will occur at the addition rate where either:

(1) the FCCU meets 20 ppmvd NO_x (corrected to 0% O_2) on a 365-day rolling average, in which case COPC will agree to accept limits of 20 ppmvd NO_x (corrected to 0% O_2) on a 365-day rolling average basis at the conclusion of the Demonstration Period; or

(2) the total annualized cost-effectiveness of the NO_x Reducing Catalyst Additive used exceeds $10,000 per ton of NO_x removed as measured from an uncontrolled baseline (as estimated based on current operating parameters as compared to operating parameters during the baseline period); or

(3) the Incremental NO_x Reduction Factor is less than 1.8, where the Incremental NO_x Reduction Factor is defined as:

$$\frac{PR_i - PR_{i-1}}{CAR_i - CAR_{i-1}}$$

where:

PR_i = Pollutant (NO_x) reduction rate at increment i in pounds per day from the baseline model

PR_{i-1}	=	Pollutant (NO_x) reduction rate at the increment prior to increment i in pounds per day from the baseline model
CAR_i	=	Total Catalyst Additive Rate at increment i in pounds per day
CAR_{i-1}	=	Total Catalyst Additive Rate at the increment prior to increment i in pounds per day

If the conditions of either (1), (2), or (3) above are not met at any addition rate less than 2.0 Weight % NO_x Reducing Catalyst Additive, then the Optimized Addition Rate will be 2.0 Weight % NO_x Reducing Catalyst Additive, in pounds per day. The Optimized Addition Rate will not be calculated by interpolation between the increments; it will occur at one of the increments.

If an additive limits (i) the FCCU's ability to control CO emissions to below 500 ppmvd CO corrected to 0% O_2 on an 1-hour basis; and/or (ii) the processing rate and/or (iii) the conversion capability, and this (these) effect(s) cannot be reasonably compensated for by adjusting other parameters, then the additive rate will be reduced to a level at which the additive no longer causes such effects.

IV. ESTABLISHING AN OPTIMIZED SO_2 REDUCING CATALYST ADDITIVE ADDITION RATE

A. **Overview.** The Optimized SO_2 Reducing Catalyst Additive Addition Rate will be determined by evaluating SO_2 emissions reductions at four different addition rates.

B. **The Increments.** The four addition rates or "increments" will be:

5.0 Weight % SO_2 Reducing Catalyst Additive
6.7 Weight % SO_2 Reducing Catalyst Additive
8.4 Weight % SO_2 Reducing Catalyst Additive
10.0 Weight % SO_2 Reducing Catalyst Additive

C. **The Procedure.** COPC will successively add SO_2 Reducing Catalyst Additive at each increment set forth above. Once a steady state has been achieved at each increment, COPC will evaluate the performance of the SO_2 Reducing Catalyst Additive in terms of SO_2 emissions reductions. The final Optimized SO_2 Reducing Catalyst Additive Addition Rate will occur at the addition rate, in pounds per day, where either:

(1) the FCCU meets 25 ppmvd SO_2 (corrected to 0% O_2) on a 365-day rolling average and 50 ppmvd SO_2 (corrected to 0% O_2) on a 7-day rolling average, in which case COPC will agree to accept limits of 25 ppmvd SO_2 (corrected to 0% O_2) on a 365-day rolling average and 50 ppmvd SO_2 (corrected to 0% O_2) on a 7-day rolling average at the conclusion of the Demonstration Period;

(2) the addition of SO_2 adsorbing catalyst additive limits the FCCU feedstock processing rate or conversion capability in a manner that cannot be reasonably compensated for by the adjustment of other parameters, the maximum addition rate will be reduced to a level at which the additive no longer interferes with the FCCU processing or conversion rate; provided, however, that in no case, will the maximum addition rate be less than 5.0 weight %; or

(3) the Incremental SO_2 Pick-up Factor is less than 2.0, where the Incremental SO_2 Pick-up Factor is defined as:

$$\frac{PR_i - PR_{i-1}}{CAR_i - CAR_{i-1}}$$

where:

PR_i = Pollutant (SO_2) reduction rate at increment i in pounds per day from the baseline model

PR_{i-1} = Pollutant (SO_2) reduction rate at the increment prior to increment i in pounds per day from the baseline model

CAR_i = Total Catalyst Additive Rate at increment i in pounds per day

CAR_{i-1} = Total Catalyst Additive Rate at the increment prior to increment i in pounds per day

If the conditions of either (1), (2), or (3) above are not met at any addition rate less than 10.0 weight % SO_2 Reducing Catalyst Additive, then the Optimized Addition Rate will be 10.0

weight % SO_2 Reducing Catalyst Additive, in pounds per day. In no case will the Optimized Addition Rate will be less than 5.0 weight % SO_2 Reducing Catalyst Additive. The Optimized Addition Rate will not be calculated by interpolation between the increments; it will occur at one of the increments.

If an additive limits the processing rate or the conversion capability in a manner that cannot be reasonably compensated for by adjustment of other parameters, the additive level will be reduced to a level at which the additive no longer causes such limits or effects.

Appendix E Tab Sheet

APPENDIX E

PREDICTIVE EMISSIONS MONITORING SYSTEMS FOR HEATERS AND BOILERS WITH CAPACITIES BETWEEN 150 AND 100 mmBTU/HR

A Predictive Emissions Monitoring Systems ("PEMS") is a mathematical model that predicts the gas concentration of NO_x in the stack based on a set of operating data. Consistent with the CEMS data frequency requirements of 40 C.F.R. Part 60, the PEMS shall calculate a pound per million BTU value at least once every 15 minutes, and all of the data produced in a calendar hour shall be averaged to produce a calendar hourly average value in pounds per million BTU.

The types of information needed for a PEMS are described below. The list of instruments and data sources shown below represent an ideal case. However at a minimum, each PEMS shall include continuous monitoring for at least items 3-5 below. COPC will identify and use existing instruments and refinery data sources to provide sufficient data for the development and implementation of the PEMS.

Instrumentation:

1. Absolute Humidity reading (one instrument per refinery, if available)
2. Fuel Density, Composition and/or specific gravity - On line readings (it may be possible if the fuel gas does not vary widely, that a grab sample and analysis may be substituted)
3. Fuel flow rate
4. Firebox temperature
5. Percent excess oxygen
6. Airflow to the firebox (if known or possibly estimated)
7. Process variable data - steam flow rate, temperature and pressure - process stream flow rate, temperature & pressure, etc.

Computers & Software:

Relevant data will be collected and stored electronically, using computers and software. The hardware and software specifications will be specified in the source-specific PEMS.

Calibration and Setup:

1. Data will be collected for a period of 7 to 10 days of all the data that is to be used to construct the mathematical model. The data will be collected over an operating range that represents 80% to 100% of the normal operating range of the heater/boiler;

2. A "Validation" analysis shall be conducted to make sure the system is collecting data properly;

3. Stack Testing to develop the actual emissions data for comparison to the collected parameter data; and

4. Development of the mathematical models and installation of the model into the computer.

The elements of a monitoring protocol for a PEMS will include:

1. Applicability

    a. Identify source name, location, and emission unit number(s);

    b. Provide expected dates of monitor compliance demonstration testing.

2. Source Description

    a. Provide a simplified block flow diagram with parameter monitoring points and emission sampling points identified (e.g., sampling ports in the stack);

    b. Provide a discussion of process or equipment operations that are known to significantly affect emissions or monitoring procedures (e.g., batch operations, plant schedules, product changes).

3. Control Equipment Description

   a. Provide a simplified block flow diagram with parameter monitoring points and emission sampling points identified (e.g., sampling ports in the stack);

   b. List monitored operating parameters and normal operating ranges;

   c. Provide a discussion of operating procedures that are known to significantly affect emissions (e.g., catalytic bed replacement schedules).

4. Monitoring System Design

   a. Install, calibrate, operate, and maintain a continuous PEMS;

   b. Provide a general description of the software and hardware components of the PEMS, including manufacturer, type of computer, name(s) of software product(s), monitoring technique (e.g., method of emission correlation). Manufacturer literature and other similar information shall also be submitted, as appropriate;

   c. List all elements used in the PEMS to be measured (e.g., pollutant(s), other exhaust constituent(s) such as O_2 for correction purposes, process parameter(s), and/or emission control device parameter(s));

   d. List all measurement or sampling locations (e.g., vent or stack location, process parameter measurement location, fuel sampling location, work stations);

   e. Provide a simplified block flow diagram of the monitoring system overlaying process or control device diagram (could be included in Source Description and Control Equipment Description);

   f. Provide a description of sensors and analytical devices (e.g., thermocouple for temperature, pressure diaphragm for flow rate);

   g. Provide a description of the data acquisition and handling system operation including sample calculations (e.g., parameters to be recorded, frequency of measurement, data averaging time, reporting units, recording process);

   h. Provide checklists, data sheets, and report format as necessary for compliance determination (e.g., forms for record keeping).

5. Support Testing and Data for Protocol Design

   a. Provide a description of field and/or laboratory testing conducted in developing the correlation (e.g., measurement interference check, parameter/emission correlation test plan, instrument range calibrations);

   b. Provide graphs showing the correlation, and supporting data (e.g., correlation test results, predicted versus measured plots, sensitivity plots, computer modeling development data).

6. Initial Verification Test Procedures

   a. Perform an initial relative accuracy test (RA test) to verify the performance of the PEMS for the equipment's operating range. The PEMS must meet the relative accuracy requirement of the applicable Performance Specification in 40 C.F.R. Part 60, Appendix B. The test shall utilize the test methods of 40 C.F.R. Part 60, Appendix A;

   b. Identify the most significant independently modifiable parameter affecting the emissions. Within the limits of safe unit operation, and typical of the anticipated range of operation, test the selected parameter for three RA test data sets at the low range, three at the normal operating range and three at the high operating range of that parameter, for a total of nine RA test data sets. Each RA test data set should be between 21 and 60 minutes in duration;

   c. Maintain a log or sampling report for each required stack test listing the emission rate;

   d. Demonstrate the ability of the PEMS to detect excessive sensor failure modes that would adversely affect PEMS emission determination. These failure modes include gross sensor failure or sensor drift;

   e. Demonstrate the ability to detect sensor failures that would cause the PEMS emissions determination to drift significantly from the original PEMS value;

   f. The PEMS may use calculated sensor values based upon the mathematical relationships established with the other sensors used in the PEMS. Establish and demonstrate the number and combination of calculated sensor values which would cause PEMS emission determination to drift significantly from the original PEMS value.

7. Quality Assurance Plan

a. Provide a list of the input parameters to the PEMS (e.g., transducers, sensors, gas chromatograph, periodic laboratory analysis), and a description of the sensor validation procedure (e.g., manual or automatic check);

b. Provide a description of routine control checks to be performed during operating periods (e.g., preventive maintenance schedule, daily manual or automatic sensor drift determinations, periodic instrument calibrations);

c. Provide minimum data availability requirements and procedures for supplying missing data (including specifications for equipment outages for QA/QC checks);

d. List corrective action triggers (e.g., response time deterioration limit on pressure sensor, use of statistical process control (SPC) determinations of problems, sensor validation alarms);

e. List trouble-shooting procedures and potential corrective actions;

f. Provide an inventory of replacement and repair supplies for the sensors;

g. Specify, for each input parameter to the PEMS, the drift criteria for excessive error (e.g., the drift limit of each input sensor that would cause the PEMS to exceed relative accuracy requirements);

h. Conduct a quarterly electronic data accuracy assessment tests of the PEMS;

i. Conduct semiannual RA tests of the PEMS. Annual RA tests may be conducted if the most recent RA test result is less than or equal to 7.5%. Identify the most significant independently modifiable parameter affecting the emissions. Within the limits of safe unit operation and typical of the anticipated range of operation, test the selected parameter for three RA test data pairs at the low range, three at the normal operating range, and three at the high operating range of that parameter for a total of nine RA test data sets. Each RA test data set should be between 21 and 60 minutes in duration.

8. PEMS Tuning

a. Perform tuning of the PEMS provided that the fundamental mathematical relationships in the PEMS model are not changed.

b. Perform tuning of the PEMS in case of sensor recalibration or sensor replacement provided that the fundamental mathematical relationships in the PEMS model are not changed.

Appendix F Tab Sheet

APPENDIX F

FCCU NO_X CONTROL TECHNOLOGY
DESIGN AND OPERATING PARAMETERS

All air pollution control equipment designed pursuant to this Appendix will be designed and built in accordance with accepted engineering practice and any regulatory requirements that may apply.

I. Selective Catalytic Reduction (SCR)

A. Design Considerations

1. Catalyst

a. Type
b. Size/Pitch
c. Volume of Initial Charge
c. Operating Life
d. Catalyst Module Replacement Strategy to Maintain Efficiency
e. Minimum Design Inlet Temperature
f. Disposal of Spent Catalyst Module

2. Reactor

a. Reactor Volume
b. Internal Configuration
c. Location in Process Train
d. Soot Blowers
e. Pressure Drop
f. Flow Orientation

3. Reductant Addition

a. Type (Anhydrous Ammonia, Aqueous Ammonia, or Urea)
b. Reductant Addition Rates
c. Diluent Type and Rate
d. Flow Distribution Manifold
e. Injection Grid / Nozzles
    i. Number
    ii. Size
    iii. Location
    iv. Controls
f. Ammonia Slip

4. Flue Gas Characteristics

    a. Inlet/Outlet NO_x Concentration
    b. Flue Gas Volumetric Flow
    c. Inlet/Outlet Temperature Range
    d. Inlet/Outlet SO_2/SO_3 Concentrations
    e. Inlet/Outlet $CO/H2O/O_2$ Concentrations
    f. Inlet/Outlet Particulate/Ash Loading and Characteristics

5. Efficiency

    a. Designed to Outlet NO_x Concentration
    b. Designed to Efficiency

6. Safety Considerations

7. Startup and Shutdown Considerations

8. Compliance with Applicable Laws and Regulations

B. Operating Considerations

1. Catalyst

    a. Catalyst Module Replacement Strategy to Maintain Efficiency

2. Reactor

    a. Operation of Soot Blowers
    b. Pressure Drop

3. Reductant Addition

    a. Reductant Addition Rates
    b. Ammonia Slip

4. Flue Gas Characteristics

    a. Outlet NO_x Concentration
    b. Flue Gas Volumetric Flow
    c. Inlet/Outlet Temperature Range
    d. Outlet SO_2 Concentrations
    e. Outlet CO/O_2 Concentrations
    f. Stack Opacity (where applicable)

5. Efficiency

    a. Actual Outlet NO_x Concentration

6. Safety Considerations

7. Startup and Shutdown Considerations

8. Compliance with Applicable Laws and Regulations

II. Lo Tox System

A. Design Considerations

1. Quench Vessel and Capacity

    a. Dimensions
        i. Internal or External to wet gas scrubber
    b. Quench Water Capacity
    c. Initial and Final Temperatures
    d. Quench Water Composition
    e. WGS Parameters (if applicable)
        i. Number of quench nozzles in service
        ii. Quench rate
        iii. Quench water composition
        iv. Make up water rate
        v. Temperature and Pressure
        vi. Pressure drop

2. Reaction Temperature Profile

    a. Location and Number of Sensors

3. Reaction Residence Time

    a. Reaction Vessel Temperature and Pressure
    b. Gas Flow Rates and Residence Time

4. Oxygen Supply

    a. Type of Supply and Purity
    b. Capacity of Oxygen Supply

5. Ozone Generators and Injection

    a. Number and Capacity
    b. Electricity Demand
    c. Concentration Ozone and Volume Oxygen/Ozone Produced and Injected
    d. Flow Distribution Manifold
    e. Injection Grid / Nozzles
        i. Number
        ii. Size
        iii. Location
        iv. Controls
    g. Ozone Slip
    h. Cooling water supply rates for ozone generators

6. Flue Gas Characteristics

    a. Inlet/Outlet NO_x Concentration
    b. Flue Gas Volumetric Flow
    c. Inlet/Outlet Temperature Range
    d. Inlet/Outlet SO_2/SO_3 Concentrations
    e. Inlet/Outlet $CO/H_2O/O_2$ Concentrations
    f. Inlet/Outlet Particulate/Ash Loading and Characteristics

7. Efficiency

    a. Designed to Outlet NO_x Concentration
    b. Designed to Efficiency

8. Safety Considerations

9. Compliance with Applicable Laws and Regulations

B. Operating Considerations

1. Reaction Temperature Profile

2. Reaction Residence Time

    a. Residence Time at Temperature and Pressure
    b. Gas Flow Rates

3. Ozone Addition

    a. Ozone Addition Rates

b. Ozone Slip

4. Flue Gas Characteristics

a. Outlet NO_x Concentration
b. Flue Gas Volumetric Flow
c. Inlet/Outlet Temperature Range
d. Outlet SO_2 Concentrations
e. Outlet CO/O_2 Concentrations

5. WGS Operating Parameters

a. Number of quench nozzles in service
b. Quench rate
c. Quench water composition
d. Make up water rate
e. Temperature and Pressure
f. Pressure drop

6. Efficiency

a. Actual Outlet NO_x Concentration

7. Compliance with Applicable Laws and Regulations

III. Enhanced Selective Non-Catalytic Reduction

A. Design Considerations

1. Reductant Addition

a. Type (Anhydrous Ammonia, or Aqueous Ammonia)
b. Primary and Enhanced Reductant Addition Rates
c. Composition of Enhanced Reductant
d. Diluent Type and Rate
e. Flow Distribution Manifold
f. Injection Grid / Nozzles
    i. Number
    ii. Size
    iii. Location
    iv. Controls
f. Ammonia Slip

2. Flue Gas Characteristics

a. Outlet NO_x Concentration
b. Flue Gas Volumetric Flow
c. Inlet/Outlet Temperature Range
d. Inlet/Outlet SO_2/SO_3 Concentrations
e. Inlet/Outlet $CO/H_2O/O_2$ Concentrations

3. Efficiency

a. Designed to Outlet NO_x Concentration

4. Safety Considerations

5. Startup and Shutdown Considerations

6. Compliance with Applicable Laws and Regulations

B. Operating Considerations

1. Reductant Addition

a. Reductant Addition Rates
b. Ammonia Slip
c. Enhanced Reductant Composition

2. Flue Gas Characteristics

a. Outlet NO_x Concentration
b. Flue Gas Volumetric Flow
c. Inlet/Outlet Temperature Range
d. Outlet SO_2 Concentrations
e. Outlet COO_2 Concentrations

3. Efficiency

a. Actual Outlet NO_x Concentration

4. Safety Considerations

5. Startup and Shutdown Considerations

6. Compliance with Applicable Laws and Regulations

Appendix G Tab Sheet

APPENDIX G

STUDY OF BREAKTHROUGH IN DUAL CARBON CANISTERS

1. COPC's study of dual carbon canisters will be designed to determine the concentration of VOCs or benzene that may be emitted from the primary (lead) carbon canister in a dual series before VOCs and/or benzene above background are emitted from the secondary (tail) carbon canister.

2. COPC will select a total of ten dual carbon canisters from any Refinery for which COPC may seek a change in the definition of "breakthrough" pursuant to Paragraph 187. In making the selection, COPC will review the frequency with which each primary carbon canister historically has been changed out and include in the study, to the extent possible, dual canister systems in which the life expectancy of the primary canisters vary. COPC will include, if possible, at least five dual carbon canisters where the life expectancy of the primary canister is approximately one month or less.

3. COPC will submit to EPA and the Applicable Co-Plaintiff a study proposal that identifies the location and size of each of the selected dual carbon canisters and the historical life expectancy of the primary canister in each series. The parties will endeavor to come to an agreement informally. Unless EPA provides comments within ninety (90) days after receipt of COPC's proposal, COPC may immediately thereafter commence the study ("Study Commencement") and will notify EPA and the Applicable Co-Plaintiff of the date of such Study Commencement.

4. By no later than seven days after Study Commencement, COPC will monitor each of the selected dual carbon canister systems for breakthrough between the primary and secondary carbon canisters and for emissions from the secondary canister. Thereafter, COPC

will monitor for breakthrough between the primary and secondary canisters in accordance with the frequency specified in 40 C.F.R. § 61.354(d).

5. On the first monitoring occasion in which breakthrough between the primary and secondary canister reaches 50 ppm or greater of VOCs or 5 ppm benzene, COPC will monitor, on that same day, emissions from the secondary canister. On a daily basis thereafter, COPC will monitor emissions from both the primary and secondary canister.

6. Within eight (8) hours of detecting VOC or benzene emissions above background from the secondary canister under Paragraph 5 of this Appendix G, COPC will replace the original primary canister with a fresh carbon canister (the original secondary carbon canister will then become the new primary carbon canister and the fresh carbon canister will become the secondary canister). The provisions of this Appendix G (not Paragraph 189) will apply to the timing of the replacement of any primary canister that is a subject of this study, for so long as the carbon canister is monitored for purposes of the study. After the carbon canister no longer is monitored for purposes of this Study, the provisions of Paragraph 189 will again govern the timing of the replacement of the primary canisters, unless and until EPA redefines the meaning of "breakthrough" under Paragraph 187 and pursuant to Paragraph 10 of this Appendix G.

7. Contemporaneously with each monitoring event undertaken pursuant to this Appendix G, COPC will maintain a written record of the time, date, and monitoring results.

8. For each dual carbon canister included in this study, COPC will conduct the monitoring specified in Paragraph 5 of this Appendix G for at least two years.

9. COPC will submit a report of its Study under this Appendix G to EPA and the Applicable Co-Plaintiff within ninety (90) days of completing that study. Such report will

include, but is not limited to, all monitoring data, the replacement dates of the primary carbon canisters, and COPC's recommendations regarding the concentration of VOCs or benzene that may be emitted from the primary canister in a dual series before VOCs and/or benzene above background are emitted from the secondary canister. By no later than sixty (60) days after receipt of the report, EPA and COPC jointly will evaluate the breakthrough limits set forth in Paragraph 187 and assess whether any revisions are necessary.

10. Based on data generated under this Appendix G, and other relevant and available information, EPA may, in consultation with COPC, determine that a revised definition of breakthrough is a more appropriate definition of breakthrough under Paragraph 187 of the Consent Decree for all or a subset of the carbon canister systems employed at COPC's Refineries. Any such revised definition will apply (in lieu of the definition in Paragraph 187) thirty (30) days after notice of such determination, unless that determination is subject to Dispute Resolution under Section XV of the Consent Decree.

Appendix H Tab Sheet

Appendix H

Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
Permit 2593-V0 (Unit 293) Deviation	Sept 15, 2000	Sept 13 & 14, 2000	Exceeded max permitted heater duty on 09/13 & 09/14/00 w/ associated increased emissions of NOx, PM, CO, & VOC- each <1 lb/hr for the duration for the exceedance. Exceedance lasted 16 hours.
Benzene Waste NESHAP Report for July 1, 2000 - Sept 30, 2000	Oct 4, 2000	April 1, 2000 - Sept 30, 2000	Flow-weighted avg benzene concentration was 10.7 ppmw; Failed to remove benzene from the waste stream to a level less than 10 ppmw.
Closed Loop Sampling	Nov 10, 2000	May 10, 1995 - Aug 23, 2001	12 sample systems did not meet requirements of LA MACT.
Permit 2113-V0 (Unit 292) Deviation	Dec 29, 2000	Dec 27, 2000	Exceeded max permitted heater duty on 12/27/00 w/ associated increased emissions of NOx, PM, CO, & VOC- each <.5 lb/hr for the duration for the exceedance. Exceedance lasted 1 hr.
Permit 2113-V0 Deviation (General Condition R Report)	Jan 10, 2001	Jan 4, 2001	Maximum permitted heater duty for EP 292-H-1 exceeded for 1 hour due to increased flows of fuel gas (+2.60 MMBtu/hr over permitted 24.9). Resulted in exceedances of NOx, PM, CO, & VOC (est <.5 lb/hr).
2000 Fourth Quarter NSPS Excess Emission Report	Jan 24, 2001	Unknown	H2S fuel gas monitor measured a concentration of 297.12 ppm H2S in the fuel gas during the exceedance. The exceedance occurred during an amine fuel gas contactor change.

Appendix H

Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
Permits 1810-V0 (Unit 1291) and 2512-V0 (Unit 491) Deviation	Feb 22, 2001	Feb 20, 2001	Amine contactor experienced foaming problems, causing an increase in amount of H2S in fuel gas sent to the 1291-H-2/3, 491-H-1, and 491-H-2 heaters. As a result, SO2 emisions from the heaters exceeded max permit limit.
Incident Report	Feb 24, 2001	Feb 24, 2001	Exceeded SO2 limit for Emission Source 1291-H-2/3 (FCC Feed Heaters) .58 lbs above permit limit of 4.84lb/hr.
Sept-Dec 2000 semiannual- Permit Numbers 1810-V0, 2155-V0, 2511-V0, 2512-V0, 2513-V0/V1, 2593-V0, & 2113-V0	Mar 15, 2001	Unknown	Pressure safety relief valve (891-PSV-25) malfunction. Missing monitoring date. Safety relief valve 891-PSV-25 was remonitored on Feb 13, 2001.
		Unknown	Deviation re missing monitoring data above was not reported as required by Gen Cond R.
2000 Annual (Sept-Dec) Permit Numbers 1810-V0, 2155-V0, 2511-Vo, 2512-V0, 2513-V0/V1, 2593-V0, & 2113-V0	Mar 15, 2001	Oct 17, 2000	Combined SO2 emissions exceeded permit limits by 5.70 lbs for the duration of the deviation (4 hours) due to an unexpected increase in operating rates for the FCC Unit & the CO Boilers (301-B-2A & 301-B-2B).
		Dec 12, 2000	Combined SO2 emissions exceeded permit limit by 8.39 lbs for 13 hours on 12/01/00 due to FCC unit optimization (EP 301-B-2A & 301-B-2B).

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Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
		Dec 7, 2000	Heater SO2 em exceeded limit by <1 lb for 1 hr on 12/07/00. Fuel Gas System >160 ppm H2S. Amine contactor anti-foam injection line became temporarily plugged causing an increase in the amount of H2S in fuel gas sent to 1291-H-2/3 Heater.
2000 Annual (Sept-Dec) Permit Numbers 1810-V0, 2155-V0, 2511-Vo, 2512-V0, 2513-V0/V1, 2593-V0, & 2113-V0		2000 calendar year	Annual NOx limit exceeded for EP 491-H-1.
		Dec 27, 2000	Max hourly fired duty limit exceeded for EP 292-H-1 for 1 hour due to heater maintenance and burner cleaning.
2001 First Quarter NSPS Excess Emission Report	Apr 27, 2001	Numerous	Opacity greater than 30% for B Boiler.
Permit 2155(Unit 301) Deviation	May 31, 2001	May 14- 16, 2001	Monitor offline due to malfunction of solenoid valves- did not use alternate monitoring per letter dated 10/25/04.
Permit 2593-V0 (Unit 293) Deviation	June 15, 2001	June 13, 2001	Exceeded max permitted heater duty for 293-H-2 for 1 hr. Associated increased emissions of NOx, PM, CO,& VOC were each less than 1 lb/hr for the 1 hr duration.

Appendix H

Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
Jan-June 2001 semiannual - Permit Numbers 1810-V0, 2155-V0, 2511-V0, 2512-V0, 2513-V1, 2593-V0, & 2113-V0	Sept 21, 2001	First Half 2001	Quarterly Valves not monitored as required; According to supplemental information dated 06/19/04, number of components are as follows: Unit 291: 2; Unit 292: 2; Unit 293:1; Unit 412: 25; Unit 491: 31; Unit 891:1; Unit 1291: 3; Unit 412S: 2; Unit 1791:1; Unit 6191:4; 1 missed monitoring period for each component.
		Jan 11, 2001	Failed to maintain daily log of opacity observations- log sheet for Jan 11, 2001 could not be located (EP 491-H-1, 491-H-2, 891-H-1, 1291-H-2/3).
Consolidated Compliance Order & Notice of Potential Penalty, AE-CN-01-0164	Oct 25, 2001	Projects in 1997, 1999 & 2000	Three projects which potentially exceeded the PSD significance level for NOx and for which the Respondent failed to demonstrate use of BACT (1997 Aromatics Extraction Unit Process Flare Adequacy Study, 1999 Naptha Hydrotreater Unit Feed Pump Impeller & Motor Upgrade, & 2000 Thermal Hydrealkylation Unit Process Flare Adequacy Study).
Emission Testing Report (In accordance w. AE-CN-01-0164)	Mar 7, 2002	Jan 18, 2002	Stack Test Results for Heater No. 1792-H-1 failed to verify that heater was meeting vendor guaranteed emission rate.
Permit 2155-V0 (Unit 301) Deviation	Mar 18, 2002	Mar 13, 2002	Sample valve inadvertently closed after RATA testing was completed (EP 301-B-3).

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Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
2001 Semiannual Compliance Certification for the 3rd & 4th Quarters- Air Permit Nos. 1810-V0, 2155-V0, 2511-V0, 2512-V0, 2513-V2, 2593-V0, 2113-V0	Mar 25, 2002	Oct 26, 2001	Summary report for the opacity monitors on Boilers 301-B-2A & 301-B-2B were not included in the report submitted for the 3rd quarter of 2001.
		Mar 31, 2001	Daily opacity log sheet for 03/31/01 could not be located for EP 301-B-3, 491-H-1/2, 891-H-1, & 1291-H-2/3.
Permit 2155-V0 (Unit 301) Deviation- General Cond R Report	Apr 5, 2002	Mar 18-Apr 2, 2002	On Apr 2, 2002, it was discovered that one of the two gas sample streams to the boiler, EP 301-B-3, had been inadvertently closed off from the analyzer since Mar 18, 2002. Immediately opened to monitor. Failed to continuously monitor and record the concentration of H2S in fuel gases before being burned in any fuel gas combustion device.
Alliance Refinery Permit Deviations- 2593 (Unit 293), 2513-V1 (Unit 412), 2512-V0 (Unit 491), 1810-V0 (Unit 1291), & 2155-V0 (Unit 301)	June 11, 2002	First Half 2002	13 components (Quarterly Valves) not placed into the monitoring scheduling system properly; According to supplemental information dated 10/25/04, number of missed monitoring events is as follows: Unit 1291:1 Unit 412:3; Unit 491:9; One missed monitoring event for each component.

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Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
2002 Fourth Quarter NSPS Excess Emission Report & Additional information submitted 06/16/04	Jan 31, 2003	Numerous	71 incidents in which opacity exceeded 30% for CO Boiler 301-B-2B.
		Jan 31, 2003	Failed to include information required by 40 CFR 60.7(c)(1) & (2) in report-submiitted 06-16-04
Semiannual Compliance Certification for the 3rd & 4th Quarters of 2002- Air Permit Nos. 1810-V0, 2155-V0, 2511-V0, 2512-V0, 2513-V2, 2593-V0, 2113-V0 & 2776-V0	Mar 21, 2003	Unknown	Documentation for putting valve tags No. 00449A, 00460B, 1075, 3908, 4041 for Unit 1291, and 8603, 8693, 8918B for Unit 412 on "Delay of Repair" were missing or incomplete.
Semiannual Compliance Certification for the 3rd & 4th Quarters of 2002- Air Permit Nos. 1810-V0, 2155-V0, 2511-V0, 2512-V0, 2513-V2, 2593-V0, 2113-V0 & 2776-V0		Unknown	Did not notify within specified time period for above deviations.

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Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
Permit 2155-V0 (Unit 301) Deviation	July 17, 2003	July 4, 2003	On July 4, 2003, the supplemental boiler (301-B-3) H2s in Fuel Gas Monitor experienced a malfunction due to the sample valve being inadvertently closed following repairs to the sample line.
Permit 2155-V0 (Unit 301) Deviation	Aug 18, 2003	Aug 13, 2003	On Aug 13, 2003, the supplemental boiler's (301-B-3) H2S in Fuel Gas Monitor experienced a malfunction due to the sample valve inadvertently remaining closed to the sample line following the quarterly Cylinder Gas Audit.
LDEQ Inspection	Aug 26-Sept 17, 2003	Aug 28, 2003	A sewer system access cover was found to be open near the roadway east of Tank 111.
		Sept 2, 2003	Unit 7991 (Saturated Gas Unit): 2 open-ended lines.
		Sept 4, 2003	Unit 1791(Aromatic Extraction Unit): catch basin/sump was not properly sealed.
		Sept 5, 2003	Water draws on tanks not double-blocked -Emission Points 100-T-001, -002, -003, -004, -005, -006, -007, -113, -114, -202, & -204.
		Sept 5, 2003	2 open-ended lines @ EP 100-T-001.
		Unknown	Missed Monitoring for LDAR; Number of missed LDAR monitoring events are as follows: Unit 191: 16; Unit 291: 224; Unit 1391: 320; Unit 1791: 288; Unit 1792: 4; Unit 1792: 32 (Attachment 2 of 10/25/04 submittal).

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Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
Fugitive Emissions Monitoring Program-Permit Deviations for 2512-V0 (Unit 491); 2511-V1 (Unit 891); 1810-V1 (Unit 1291); 2513-V2 (Unit 412); and 2113-V0 (Unit 292)	Sept 24, 2003	N/A	Monitoring deviations; Reported below
		Unknown	Pumps were visually inspected weekly, but quarterly Method 21 monitoring was not performed. Total Missed Mon Pds: Unit 1291:32; Unit 412:496.
		Unknown	Weekly visual inspections of pumps were not performed, but pumps were Method 21 monitored quarterly: Unit 292: 1; Unit 491: 4; Unit 1291: 5; Unit 412:5. 201 missed inspections for each component.
		Unknown	Valves were incorrectly classified and monitored as connectors: Unit 412: 1; Unit 891:2; Unit 491: 5; 11 missed inspections each.
		Unknown	Valves omitted from LDAR data management system: Total Missed Inspections: Unit 891: 320; Unit 412: 561; Unit 491: 539.
		Unknown	Connectors omitted from LDAR data management system: Unit 1291: 2; Unit 491: 54; 4 missed LDAR monitoring events each.

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Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
Permit 2155-V0 (Unit 301) Deviation	Nov 24, 2003	Nov 22, 2003	On Nov 22, 2003, the supplemental boiler's (301-B-3) H2S in Fuel Gas Monitor experienced a malfunction due to the sample cell's sliding valve remaining in the closed position. During this period, there was no observed exceedance or recordable increased level on the H2S CEM RAI-138A, which is the Refinery Fuel Gas analyzer containing the same stream monitored by the supplemental boiler's CEMS.
Permit 1810-V1 (Unit 1291) Deviation	Jan 2, 2004	Dec 29, 2003	On Dec 29, 2003, H2S in Fuel Gas Monitor experienced an H2S exceedance due to switching the feed stream to an alternate exchanger at the SRU. Exceedance of the 3-hour rolling avg lasted for approx 120 minutes. Fuel burned in 1291-H-2/3.
Air Toxics Referral	Jan 8, 2004	July 18, 2003	Sample from Stripper B, EP V-72-B, contained 16.2 ppm benzene; Failed to remove benzene from the waste stream to a level less than 10 ppmw.
Annual Compliance Certification Report 2003- Part 70 Gen Cond M- Permit Nos. 1810-V0, 2113-V0, 2155-V0, 2511-V0, 2512-V0, 2513-V0, 2593-V0, 2776-V0	Mar 30, 2004	Unknown	Unit 412: tank water draws did not meet the open-ended line requirement for EP -006, 007, 004, 003, 002, 001, 102, 202, 204, 113, 105, 104, 114, & 212.
		Jun 26, 2003	Records indicate that the daily calibration was not performed on June 26, 2003 for Unit 301, Boiler 301-B-3.

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Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
		Unknown	Quarterly NSPS CEMS report inadvertently omitted CEMS monitor downtime for Unit 491 & 301-B-3 H2S fuel gas analyzer.
		Unknown	Failed to notify of above deviation as required.
Permit 2155-V0 (Unit 301 Boilers) Permit Deviation Notification	June 24, 2004	3rd & 4th Quarter 2003 report	Failed to include information required by 40 CFR 60.7(c)(1) & (2) in report.
		Numerous	Opacity exceeded 30% for CO Boiler 301-B-2A during 3rd quarter 2003.
		Numerous	Opacity exceeded 30% for CO Boiler 301-B-2A during 4th quarter 2003.
Fugitive Emissions Monitoring Program-Permit Deviations for Title V Permit Nos. 1810-V1, 2113-V0, 2155-V0, 2511-V1, 2512-V1, & 2513-V2	Sept 22, 2004	Unknown	Numerous components were not categorized properly or included in the monitoring scheduling system properly . Total # missed LDAR monitoring events as reported in 10/25/04 submittal.
Permit 2155-V0 (Unit 301) Deviation	Sept 23, 2004	Sept 7, 2004	SO2 permit limits exceeded for Boilers 301-B-2A & 301-B-2B due to unexpected increase in the sulfur content of the feedstocks for the FCC Unit.
Supplemental Information	Oct 25, 2004	Unknown	Non-Title V Units: total of 6,543 missed LDAR monitoring events.

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Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
Permit 2513-V1 (Unit 412) Deviation	Sept 29, 2000	Sept 27-28, 2000	Tank 100-T-302 failed secondary seal gap inspection and repairs were not completed timely. (1 day delay due to extent of repairs needed and parts) According to letter dated 10/02/00, post repair insp found the seal to be in comp
Sept-Dec 2000 semiannual- Permit Numbers 1810-V0, 2155-V0, 2511-V0, 2512-V0, 2513-V0/V1, 2593-V0, & 2113-V0	Mar 15, 2001	Dec 13-21, 2000	Failed to repair the seal gaps within the allotted time frame (EP 100-T-107 & EP 100-T-201).
Permit 2513-V1 (Unit 412) Deviation (General Condition R Report)	July 3, 2001	Mar 12, 2001	Failed to provide 30 day notification prior to inspecting tank 100-T-302.
		Jun-July 9, 2001	Primary seal gap inspection was not performed on Tank 100-T-004 as required in June 2001.
Permit 2513-V1 (Unit 412) Deviation	July 23, 2001	Jan 10, 2001	Failed to provide 30 day notification prior to inspecting tank 100-T-200.
Jan-June 2001 semiannual - Permit Numbers 1810-V0, 2155-V0, 2511-V0, 2512-V0, 2513-V1, 2593-V0, & 2113-V0	Sept 21, 2001	Unknown	Failed to provide 30 day notification prior to inspecting Tank 100-T-204.

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Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
July-Dec 2001 Semiannual Monitoring Report & 2001 Annual Compliance Certification - Permit Numbers 1810-V0, 2155-V0, 2511-V0, 2512-V0, 2513-V1, 2593-V0, & 2113-V0	Mar 25, 2002	Unknown	Failed to conduct yearly primary seal inspection for Tanks 100-T-106 & T-400.
		Unknown	Failed to provide 30 day notification prior to any gap measurements required for EP 100-T-113.
11/12/2002 Air Emission Occurrence	Nov 15, 2002	Nov 12, 2002	Release of SO2, HC, and H2S; exceeded 1607-T permit limits from Em Pt. 308-F-D-1 (Low Pressure Flare).
Permit 2513-V2 (Unit 412) Deviation	Feb 19, 2003	Unknown	Seal gap inspections not performed timely for 100-T-202 & 113.
LDEQ Inspection	Aug 26-Sept 17, 2003	Sept 5, 2003	2 tears in fabric control device on guidepole for EP 100-T-102.
		Sept 5, 2003	Open gauge hatch on EP 100-T-204.
		Sept 5, 2003	Cap missing on guide pole enclosure for EP 100-T-003.
		Sept 5, 2003	Crude oil on ground @ EPs 100-T-003 & 100-T-007.
100-T-101 Primary Seal Failure Notification	Nov 12, 2003	Unknown	Primary seal of Tank 100-T-101 gapped away from tank walls.

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Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
Permit 2513-V1 (Unit 412) Deviation	Feb 10, 2004	Feb 13, 2004- date of inspection (unknown)	Annual seal gap inspection for Tank 100-T-114 was not performed.
Annual Compliance Certification Report 2003- Part 70 Gen Cond M- Permit Nos. 1810-V0, 2113-V0, 2155-V0, 2511-V0, 2512-V0, 2513-V0, 2593-V0, 2776-V0	Mar 30, 2004	Unknown	Did not submit semiannual and annual reports that comply with 40 CFR 60.698(b)(1) & (2) & 60.698(c) (NSPS QQQ).
		Unknown	Notifications of permit deviations were not made within specified time period as required by Part 70 Gen Cond R.
04-04332 Air Emission Occurrence	July 8, 2004	July 1, 2004	Release of estimated 600 lbs of HC from evaporation of 200 bbls gasoline.
Permit 2513-V2 (Unit 412) Tank 100-T-006 Deviation	July 26, 2004	July 20, 2004	Secondary seal above rim; Tank 100-T-006.

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Table of Violations Asserted by the Louisiana Department of Environmental Quality

Correspondence	Dated	Date(s) of Occurrence	Issues Identified
Permit 2513-V2 (Unit 412)- Tank 100-T-302 Deviation	Nov 23, 2004	Nov 16, 2004	Secondary seal pulled slightly away from tank wall; Tank 100-T-302.